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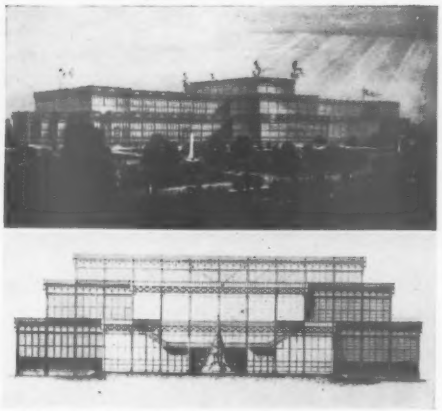
B.D.I

MARGINALIA

Comparative Sculpture

Seventy-five years ago, in 1879, Viollet-le-Duc, the man to whom France owes the rediscovery and thus the preservation of her Medieval monuments (as well as much destruction of them by restoration), proposed a new use for the Palais du Trocadero, standing empty after the exhibition of 1878. To prove that Medieval art was equal to the art of antiquity he suggested that examples of the two periods should confront one another in a Musée de Sculpture Comparée. A few months before his death on September 17 of the same year, Viollet-le-Duc presented his plan for a museum of casts to the authorities, without, however, seeing its fulfilment. On November 4 Jules Ferry decided on the foundation of the museum and it was opened to the public in 1882. Casts were made of ancient sculpture, Egyptian, Roman and Greek, from the Louvre and other museums, as well as from French Medieval works of art, including Romanesque portals and Gothic statues. The exhibits ranged from whole façades and chapels—(the fifty foot high Chapelle D'Avioth touched the glass roof)—to small fragments of decorative detail. Eventually both wings of the Trocadero were filled, looking more like store rooms than a museum. It was, nevertheless, a paradise for the student and scholar who could compare, for instance, Verrochio, Donatello and Michelangelo with the French Renaissance, but to the general public it lacked aesthetic appeal and was, at times, openly ridiculed. By 1937, when the Trocadero was replaced by the Palais de Chaillot, nearly seven million objects had been assembled. The museum was then entirely reorganized and became the Musée des Monuments Français; foreign art was abandoned, and French art augmented by copies of old paintings, stained glass (mainly illustrated by lantern slides, projected on a screen in actual size), and architectural models. While the needs of scholars is still its principal concern the display is so skilfully contrived that this museum is now worthy of visit by a wide public.



GLASPALAST, MUNICH. This year is the centenary of the erection of the Glaspalast at Munich, illustrated above, one of several direct offspring of the Crystal Palace in Hyde Park. It suffered the same fate as the Crystal Palace, being burnt down in 1931.

Murals at the Tate

Diners at the Tate Gallery must often have speculated upon the iconographic programme behind the Rex Whistler murals on the restaurant walls, since their general title *In Pursuit of Rare Meats* is by no means an obvious clue to the action which is proceeding in some of the scenes. Speculation may now cease, however, since the Trustees of the Tate have issued, in booklet form, Edith Olivier's running account of the action—an elaborate fairy-story of nostalgia for the aristocratic venery of the eighteenth century. The whole tone of this text underlines the position of these murals, commissioned by Lord Duveen in 1925, as part of the Playboy (or Pleasure principle) attitude to architecture of the nineteen-twenties, the attitude which is best expressed in Clough and Amabel Williams-Ellis's *The Pleasures of Architecture*, on which a note appeared in Marginalia for August, 1954. The text, like the mural, is full of references to landscape gardening, to Stowe and Wilton, showing an indiscriminate affection for English Baroque and English Palladian (such as would be difficult for us post-Wittkowerians), and gibes at both Wyatt and Pugin as despoilers of an Augustan ideal. The humour of the story is not easy for us to take, nowadays, just as the murals are not the most congenial company to dine with, but together they constitute a minor monument to a period of English taste.

E. McKnight Kauffer

To typify one's age, to name a generation, is a privilege which often descends in a random manner, but if such honours went by deserts, the late McKnight Kauffer would have a strong claim to apply his name to the early 'thirties, or those aspects, at least, of that age which are concerned with publicity and design, and the Modern Movement generally. For when Cyril Connolly hailed Jack Beddington as the new Lorenzo de Medici, and illustrated three of Kauffer's best posters to prove the quality of that patronage, he did so in an issue of the ARCHITECTURAL REVIEW which also contained the first publication of Tecton's Penguin Pool, and the first notices of F. R. S. Yorke's *The Modern House*.

That was in the *annus mirabilis* of 1934, when the fruits of Beddington's enlightened Shell-Mex patronage went on exhibition in the New Burlington Galleries, and McKnight Kauffer's posters there hung side by side with those of Rex Whistler, Paul Nash, Graham Sutherland, John Armstrong. But in such company he stood out as the specialist, and his sizzling *BP-ethyl* poster was the outstanding exhibit, and worthy to rank with the best contemporary work for publicity of Bayer or Cassandre. He is so much the mark of the period and the frame of mind that it is no shock to find him designing covers for special numbers of the AR, and a considerable surprise

Left: The Trocadero showing the execution of Viollet-le-Duc's idea of comparative sculpture, right, the French examples reorganized in one of the rooms in the Palais de Chaillot.

not to find him in either *Unit-1* or *Circle*, though an exhibition notice in *Axis* makes the just observation, which history will surely endorse, that his virtues as a commercial designer utterly outweigh his small talent as an easel-painter.

Shell was not his only major patron, and his work for that other new Medici and maker of the nineteen-thirties, Frank Pick at LPTB, will also be remembered, as will his posters for Eno, his work for various publishers, including Lund Humphries, for the GWR, and his designs for the ballet *Checkmate*. He had been in England since 1914, but he and his market had not really grown together until the early 'thirties, when he and his patrons effectively introduced new standards and new conceptions into English advertising. He returned to his native America in 1941, and died there in October, 1954, in his sixty-fourth year.

Architect in this Issue

Architect in charge of Offices at Wythenshawe, see pp. 374-379, Henry Thomas Seward carries on the practice of the long established Manchester firm of architects, Cruickshank and Seward, whose work in and around the city includes colleges in Southport and Barrow in Furness, Research offices for Ferranti Ltd., and a warehouse in Peter Street, next to the Free Trade Hall, which attracted a good deal of attention when it was completed in 1937 by reason of its very large window area. Beside serving on the RIBA council and various committees, Mr Seward has also been President of the Manchester Society of Architects from 1941 to 1945. An ex-rugger-player, he is now better known for his cricketing activities in the Stockport area.

Collaborators on the Triennale Labyrinth

The men who designed the Labyrinth (see pp. 401-403) and the man who drew upon its walls are more closely connected than is commonly the case with architects and the muralists who decorate their work. All four are products of the famous Architectural Faculty of the Milan Polytechnic, and although Saul Steinberg (in hat) graduated in 1940, much later than the others, he was acquainted with them during the period of his studies,

and did not lose contact with them after he had gone to America and established himself as one of the greatest satirical draughtsmen of our time. Another old acquaintance with whom Steinberg re-established contact during his visit to Milan to execute his work on the Labyrinth was the film-director Giovanni Lattuada, for whom he appeared in a short sequence filmed in the celebrated *Galleria*—celebrated in many parts of the world through the instrument of Steinberg's drawings. Lattuada also trained at the Polytechnic, and was one of the class of '32, which also included Ernesto Rogers (extreme right), Peressutti (kneeling) and Belgiojoso (left). On leaving the Polytechnic these three formed the BBPR partnership, the first B being the initial of the fourth partner, Gianluigi Banfi, and is kept in the partners' monogram as a memorial to his tragic death in a German concentration camp, one of Italy's martyrs of modern architecture. After the war the three surviving partners emerged as the true heritors of the other martyrs as well—notably Persico and Pagano; as perhaps the most powerful force in European architecture after le Corbusier; and as the re-animators of the Triennale, to each of which they have contributed an exhibit, like the Labyrinth and the display *Architettura Misura dell'Uomo* in 1951, which lends not only lustre but human significance to this three-yearly display of design.

CORRESPONDENCE

Dudok

To the Editors,
THE ARCHITECTURAL REVIEW

SIRS,—Mr. Furneaux-Jordan in his reply to my letter concerning his article on Dudok has, I feel, widened rather than narrowed the area of agreement between us. I feel, too, that he has failed to answer my main points. Permit me, therefore, to reply in turn to his comments.

First, I should like to argue against that critical reasoning which diminishes the stature of an artist because of his imitators. There is a fatal flaw in such reasoning if carried to its logical end. Do the contributions of Van der Rohe or Lloyd Wright become less important for their legions of imitators? Would one be so rash as to use such a theory in the other graphic arts, or in the arts as a whole for that matter? To use, as Mr. Jordan does, the idea of 'facile imitation' as an excuse for such criticism only begs the question. That Dudok has been unfortunate in his imitators may well be true, and doubly unfortunate those who must view and use such buildings. Such a fact should, however, play but a small part in the evaluation of the man's work, and not, as was done in the original article, be a major point.

Further, if it be true that 'penetration' is not to be found in every modern building—as Mr. Jordan grants—how are those others significantly modern? The use of reinforced mushroom in the Johnson Wax Co. Administration Building would seem to me to be more significant than the elimination of 'wall.' Mr. Jordan's contrast of the structural and stylistic nature of modernism thus, I feel, argues an architectural problem in two dimensional terms rather than three. Whether the window be 'hole' or 'transparent area' it is still part of a plane and thus but lightly touches the more profound problem of a *created space*. By such a criticism of Dudok Mr. Jordan has by inference condemned a large part of the work of Frank Lloyd Wright, surely no mean master. Rather than agree with this, may it not be necessary for one to re-examine the basic premise?

Mr. Jordan has, of course, justly pointed out that Dudok is a sensitive artist. I feel it necessary to add that in times such as these that is no small accomplishment. May I suggest, therefore, a little less haste to assign Mijnheer Dudok to 'a less significant figure in the history books.' There are still, after all, varying ways of evaluating architecture.

I am, etc.,
STANLEY M. SHERMAN.

Home at Storrington

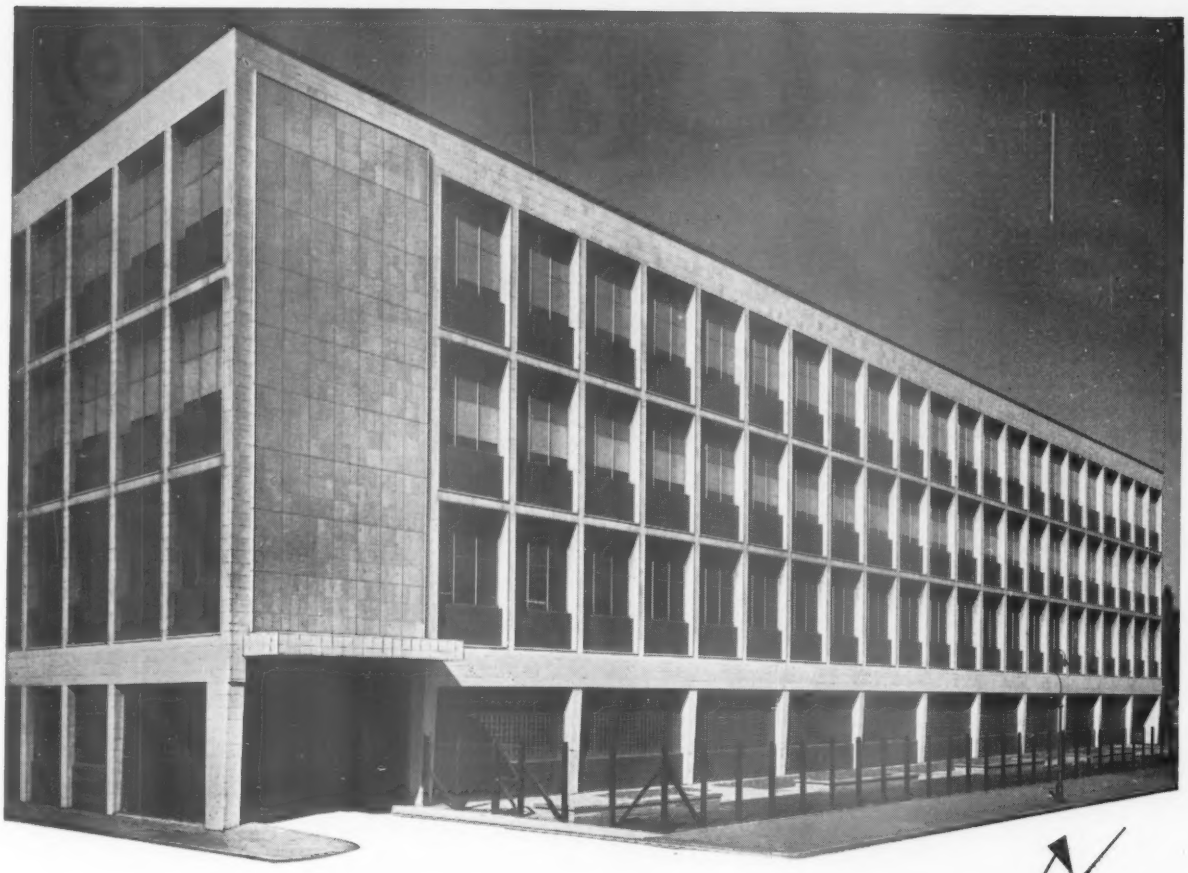
In the November issue, page 293 should have read: Architects, Richard Sheppard and Partners; Associate Architect, Gordon Taylor.

Intelligence

Paul Reilly, chief information officer of the COID since April, 1948, has been appointed Deputy Director in charge of the Industrial Division. Mr. Reilly will be succeeded by J. Noel White, who has been information officer of the Rural Industries Bureau.

ACKNOWLEDGMENTS

MARGINALIA, page 351: Viollet-le-Duc, Caisse Nationale Des Monuments Historiques, Paris, A. Calavas; page 352: Glaspalast, Munich, Museum Der Stadt Munchen Historisches; Triennale, McCallum, Arphot. FRONTIS, Kenneth Browne. HOUSE AT TOY'S HILL, pages 358-362: Galwey, Arphot. HOUSES AT HAM COMMON, pages 363-368: Galwey, Arphot, 11, R. Stallard. SACRI MONTI, pages 369-373: Anna Tomlinson. OFFICES AT WYTHENSHAWE, pages 374-380: Elsam, Mann & Cooper Ltd. NEO NORMAN, pages 381-385: 1, Mrs. Batsford, 4, 6, Valentine & Sons Ltd., 5, Airviews Ltd., 7, Country Life. CURRENT ARCHITECTURE, pages 393-396: Flats at Brixton Hill: John Pantlin. Comprehensive School at Kidbrooke: Toomey, Arphot. Grain Silo at Haughley Junction: Galwey, Arphot. MISCELLANY, pages 397-404: The Pattern of Agriculture: 3, 4, 7, Kenneth Browne, Arphot; 5, Pix Photos Ltd.; 6, S. Crowe. Townscape: COID. Exhibitions: 1, 4, 5, John Underwood. Labyrinth at Milan: 2, 7, BBPR; 3, 4, 5, 6, 7, 8, 9, 10, 11, 12: McCallum, Arphot. SKILL, pages 405-420: Drapers' Chamber of Trade: Design Research Unit. British American Tobacco: Wainwright. Design Review: John Pantlin. Techniques: 1, 2, Woodrow Service; 3, Raymonds News Agency; 5, Galwey, Arphot; 6, 12, John Maltby. The Industry's Press Information Service.



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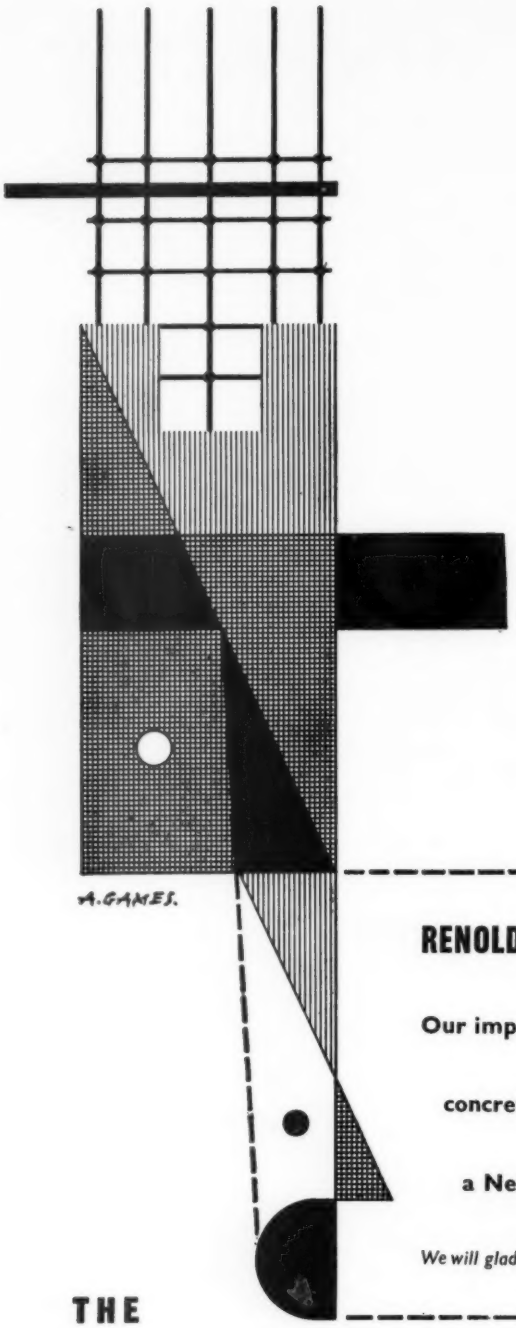

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THE ARCHITECTURAL REVIEW

Volume 116 Number 696 Dec 1954

The cover superimposes upon the plan of the Labirinto dei Ragazzi at the Milan Triennale a photograph of the labyrinth's inner wall, enlivened with sgraffiti by Saul Steinberg, whose shadow falls across his drawings. The collaboration of Steinberg with the BBPR office who designed the labyrinth itself is an almost unique example of a really close architect-artist relationship, and the product of their co-operation, which is considerably more, in both intention and effect, than a mere architect's capriccio, is described and illustrated on pp. 401-403.

351 **Marginalia**

352 **Correspondence**

354 **Frontispiece**

355 **City Rebuilding: 3** *by J. M. Richards*
To many persons it must now appear that the battle to save the City of London is already lost, and that it is now too late to alter designs, already in process of erection, which perpetuate planning mistakes of the past, are unrelated to one another, and dressed up in irrelevant period detailing. Some improvement can be looked for from the endeavours of the LCC and the Royal Fine Art Commission, and the City Fathers might facilitate one or another of the comprehensive development schemes now being discussed, but in the main the City is committed to a great deal of bad architecture. But this should not be taken as the signal to abandon hope or to give up endeavours toward improvement, and Mr. Richards's thesis in this essay is that a great deal can still be done to counteract architectural poverty with other forms of richness, for the city offers large scale opportunities even now for scenic planning or—to give it its more usual name—Townscape. Architecture which is bad in itself may still provide the town designer with an area of texture or colour, or a silhouette which can play a part in his grand design; the crudity of a crude building is only disastrous when it is allowed to infect a whole scene. But this planning and imaginative development of the areas between existing buildings, or buildings already in hand, is not the architect's responsibility, nor his clients'; this is the townscapist's province and he can only work as the servant of a larger and more comprehensive authority. The Minister of Housing and Local Government could make good his belief that the City needs special treatment by making planning permission contingent on the approval of a landscape architect, who could study and advise on visual problems of large-scale development. There is little precedent for such an appointment, but the problem of the City is equally unprecedented, and so much is at stake—in the character and prestige of the City itself—that a bold and unprecedented move is more than justified.

358 **House at Toy's Hill:** *Architects, Powell and Moya*

363 **Houses at Ham Common:** *Architects, James Cubitt & Partners*

369 **Sacri Monti** *by Anna Tomlinson*
The invention of the first Sacro Monte is due to Bernadino Caimi, a Milanese nobleman, and a minor observant of the Franciscan Order. Impressed by his visit to the Holy Sepulchre at Jerusalem, he vowed to build a representation of the tomb for the benefit of his countrymen who could not make the journey to Palestine. Impressed, too, by the organized processional approaches which the great number of pilgrims rendered necessary, he developed this theme in the first Sacro Monte, at Varallo, as a series of shrines containing tableaux from the story of the Passion, which the pilgrim visited in narrative order as he traversed the processional way to the Sepulchre. In broad outline this established the pattern of the later Sacri Monti, all built a century or so after the foundation of Varallo in 1486, all in the area north of Milan, and all (including the rebuilding of Varallo) owing something to the encouragement of St. Carlo Borromeo. The programme is always the same, chapels served by a processional way (which in Varese, the last of the Monti, becomes the dominating element), each chapel containing a scene in statuary, and culminating in a terminal chapel at the apex of the hill, or on some particularly commanding crag, the landscape often brilliantly exploited as a contributing factor in the sacred story.

374 **Offices at Wythenshawe:** *Architects, Cruickshank and Seward*

381 **Neo-Norman** *by Robin Fedden*
Though, after the revival of Gothic, the revival of Norman was almost inevitable, the style never caught the public fancy, and has left us only two important buildings, the castles at Gosford and Penrhyn, both the work of Thomas Hopper. Though he was not the only architect to essay the style, nor was Norman the only style he essayed, Hopper was the only architect to make of Neo-Norman anything distinctive or noteworthy, particularly in the domestic field. He owed his early success to the patronage of the Prince Regent, but his Neo-Norman career begins in Ireland, where he succeeded Nash at Shane, and this led, in 1819, to the commission for Gosford. The style there appeared fully fledged, and without any apparent direct antecedents, and the exteriors, at least, are bold and successful, even if his interiors, as at Penrhyn, begun in 1827, are less acceptable. Externally he adapted genuine Norman details with ingenuity and understanding, but inside his castles his detailing is much more eclectic, and verges on Byzantine and Arab. Nevertheless, at Penrhyn the entire building is, as Mr. Fedden observes, the work of a single mind, for Hopper was here given a free hand with the furniture as well, and the whole interior was as Norman as he could make it. Lithographs made immediately upon the completion of the Castle in 1837 show that the interior has hardly been altered since then, and the house therefore passes to the National Trust an almost untouched monument of a very rare architectural style.

386 **Preview: UNESCO H.Q.:** *Architects, Breuer, Zehrfuss and Nervi*

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Headquarters for a Trade Association in Harley Street: *Architects, Misha Black and Ellis Miles*

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The Authors *Anna Tomlinson*, born in Cambridge, 1932. Now a student at the AA School of Architecture, completing her fifth year in the Tropical Design School under Maxwell Fry. *Robin Fedden*, secretary of the Historic Buildings Committee of the National Trust. Author of a number of books, including 'Crusader Castles,' a study of the military architecture of the Crusades.

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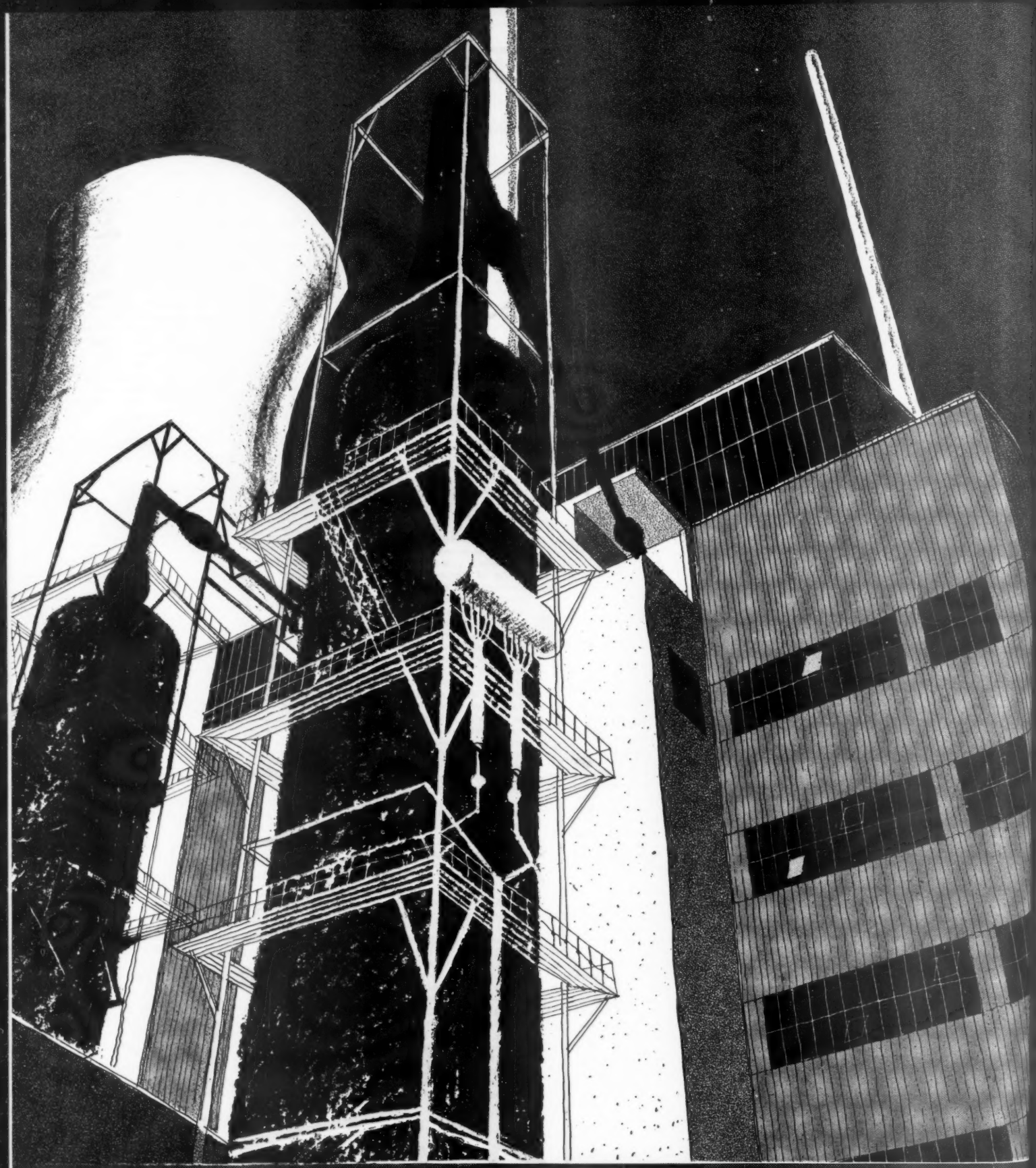


Atomic Power Station

Changing technology affects some building-types immediately, and atomic power-stations will show a new shape in the landscape: above is England's first one, Calder Hall in Cumberland. Though the cooling towers remain, the giant chimneys will be replaced by slim waste-stacks above the 125-foot reactor towers, whose concrete shells will be flanked by the black bulks of the heat exchangers. The drawing is by Kenneth Browne and the project will be illustrated in detail in the January special preview issue.

J. M. Richards

CITY REBUILDING: 3*

Of course we all want to improve the architectural quality of new buildings in the City, but many of us are beginning to look on this as a battle already lost. Recent criticism has drawn attention to the shortcomings of so many designs that it is too late to alter. While we complain the steel skeletons rise into the sky, stimulating as signs that reconstruction is on the move and elegant enough in their unclothed state, but destined before long, as we very well know, to be hung with brick and stone in clumsy reminiscence of irrelevant antique styles, perpetuating mistakes in planning and siting that have been made too often already and having no apparent relationship one to another.

What, we ask ourselves in some dismay, is going to stop this process continuing until the City is solidly built up—dull, characterless and obsolescent; an amorphous mass in which the remnants of the lively personality of London are somewhere, though invisibly, embedded? Can complaints by the critics, even when supported by exhortations from the Minister of Works, do very much to halt the process while property owners continue to have their mind's eye filled with a picture of a city of classical palaces symbolizing their commercial solidity and prosperity, while architects continue to be chosen because of their capacity to produce such palaces quickly and expensively enough and while the City Fathers continue to encourage piecemeal development, having it seems, in their anxiety to get construction under way, lost that vision of a nobler, better planned city with which they—and we who trusted them—finished the war?

So vast is the volume of building work either already in hand or due to be put in hand that there is clearly no chance of this process being halted in time for a change of heart

* Recent architecture and recently published architectural projects in the City of London were criticized in an article published in June of this year, and the treatment of the new buildings round St. Paul's Cathedral in September.

to be induced in the property owners and their architects. A change of heart on the part of the City Fathers may still set a course towards improvement later on and may even facilitate an occasional undertaking conceived on more intelligent lines, like the New Barbican scheme described on another page. Minor improvements in architecture and layout may likewise result from the endeavours of the London County planning department and of bodies like the Royal Fine Art Commission. But we must face the fact that it is too late to stop a great deal of bad architecture from going up in the City in the next few years, not only for the reasons given but because it is only a reflection of the confusion of aims and the lack of architectural convictions existing in our time.

Must we then throw up our hands in despair? Are there not other measures a gradually awakening City Corporation can take, and above all is it enough for the responsible arm of the Government, the Ministry of Housing and Local Government to take the attitude that now that regular meetings take place between the City Corporation, its planning consultants and the LCC to co-ordinate the development programmes of successive areas, and now that the Royal Fine Art Commission is being given earlier opportunity to comment, the Ministry has done all it can? Is not the certain presence of a quantity of bad architecture an additional argument for searching for means by which architectural poverty can be counteracted by other forms of richness? A Government department concerned with planning cannot disinterest itself in any process of co-ordination by means of which a multiplication of architectural episodes can be combined into a whole possessing the good qualities absent in each part, and other good qualities besides.

Another name for this process is townscaping, and the only way that is left of fighting the visual disaster with which the City is threatened at this moment—apart from continuing to plead for the appointment of better architects and the better briefing of the old architects—is to shift the battleground on to the broader plane of townscape, and say to ourselves that good landscaping can make a tolerable whole out of a City comprised of much bad architecture. For how much in fact do the visual qualities that we wish the City to possess depend on strictly architectural issues? The town designer, operating as he does on a scenic scale, exercises his talents and imagination on raw materials of many kinds; and chiefly on raw materials over whose nature he has no control. A large part of these consists of buildings—and a townscapist in the City of London, as we have seen, will have to deal mostly with bad buildings. But even bad buildings have colour and shape and outline and texture, all qualities which the townscapist can utilize as the painter utilizes the colours on his palette. The painter's palette may contain what some might call an ugly red or a dirty yellow, but these are only ugly and dirty in any way that matters in relation to the other colours among which they are placed. Similarly the crudity of crudely designed buildings only becomes disastrous if they are allowed to transfer their crudity to the large landscape picture to which they make their contribution.

The architect's responsibility stops short of this point; so does his client's. The townscapist's starts there. His contribution is vital, but he can only get to work at the behest of the Government itself and with the connivance of the City Corporation, the LCC and the other authorities concerned. If the Minister of Housing and Local Government, as an earnest of his belief that the City of London is a special territory, which he owes it to the nation to treat with special care and forethought, were to appoint a landscape architect to supervise all aspects of City rebuilding, and make it a condition of the grant of planning consent to any building scheme in the City that it must conform to the wishes of the land-

scape architect, the City could still be rescued, as regards the things that matter most, from the fate that threatens it. Otherwise its destiny is not simply that it will be filled with bad buildings but that these will result in the total destruction of its shapeliness, its personality, its consciousness of its own history and the dignity that springs therefrom. The loss of these, and the threatened total disappearance of a spirit, in architectural matters, of enterprise and alertness, is the first step towards the loss of its prestige and prosperity.

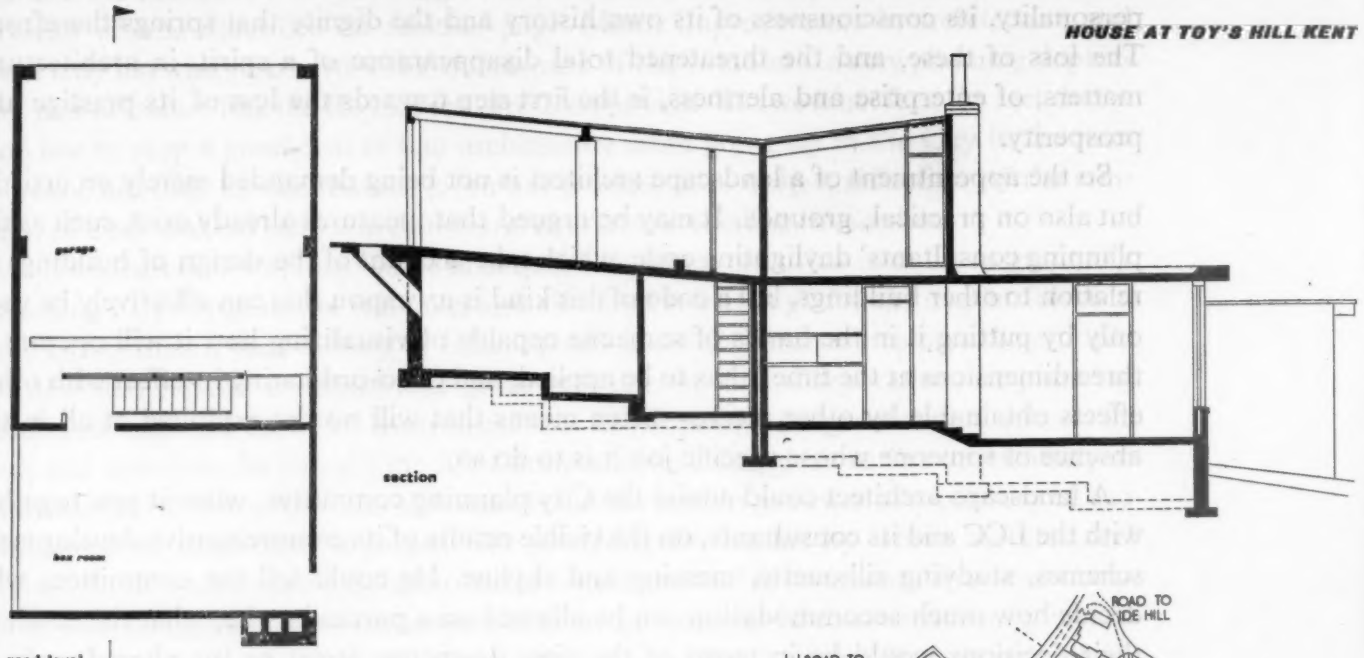
So the appointment of a landscape architect is not being demanded merely on artistic, but also on practical, grounds. It may be argued that measures already exist, such as the planning consultants' daylighting code, which take account of the design of buildings in relation to other buildings, but a code of this kind is a weapon that can effectively be used only by putting it in the hands of someone capable of visualizing how it will operate in three dimensions at the time it has to be applied, and of co-ordinating its effect with other effects obtainable by other means—often means that will not be exploited at all in the absence of someone whose specific job it is to do so.

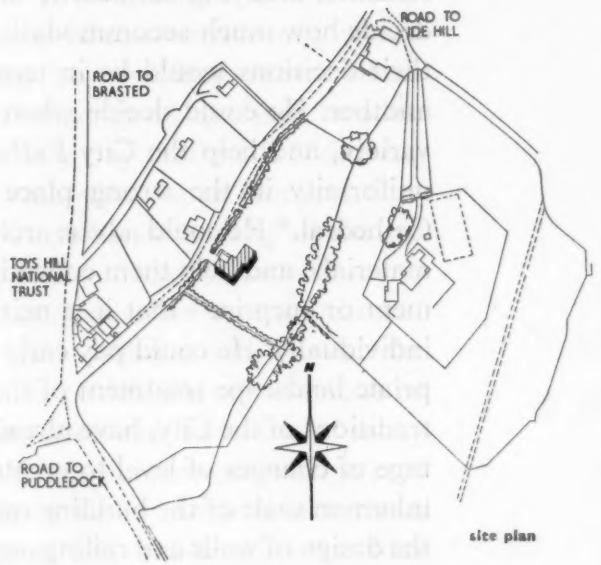
A landscape architect could advise the City planning committee, when it gets together with the LCC and its consultants, on the visible results of its comprehensive development schemes, studying silhouette, massing and skyline. He could tell the committees who decide how much accommodation can be allowed on a particular site, what the result of their decisions would be in terms of the view down one street or the altered scale of another. He could decide when uniformity between buildings was desirable and when variety, and help the City Fathers to avoid mistakes like the attempted imposition of uniformity in the wrong place and of the wrong kind in the area round St. Paul's Cathedral.* He could advise architects on the use of materials in relation to neighbouring materials, and help them collectively to contrive effects—whether of contrast or concealment or surprise—that it is neither their business nor within their capacity to contrive individually. He could pay early enough attention to matters of planting and the appropriate landscape treatment of the small open spaces that the consultants, mindful of the traditions of the City, have already provided for in their street plan. He could take advantage of changes of level to create his own foreground architectural dramas to offset the inhuman scale of the building masses in the background. He could supervise and control the design of walls and railings and traffic signs and lamp-posts—all the incidentals that do so much to make or mar the quality of the urban scene. On the subject of artificial lighting, indeed, he could devise co-ordinated schemes that could open up enchanting new possibilities of relieving the dullness of commercial city scenery.

If there is little contemporary precedent for the appointment of such a personage, there is equally little contemporary precedent for a townscaping opportunity of the kind the City of London has presented since the bombs did their work upon it a dozen years ago. To seize the opportunity with both hands would not only make something positive and visually interesting out of an area that will otherwise become at best muddled and dull, at worst hideous beyond bearing; it would take an important step towards resolving the whole question of how to give quality and interest to conglomerations of big city buildings now that such buildings, considered by themselves, tend more and more to take on the impersonal character of the man-made mountain, the packing-case and the ant-heap.

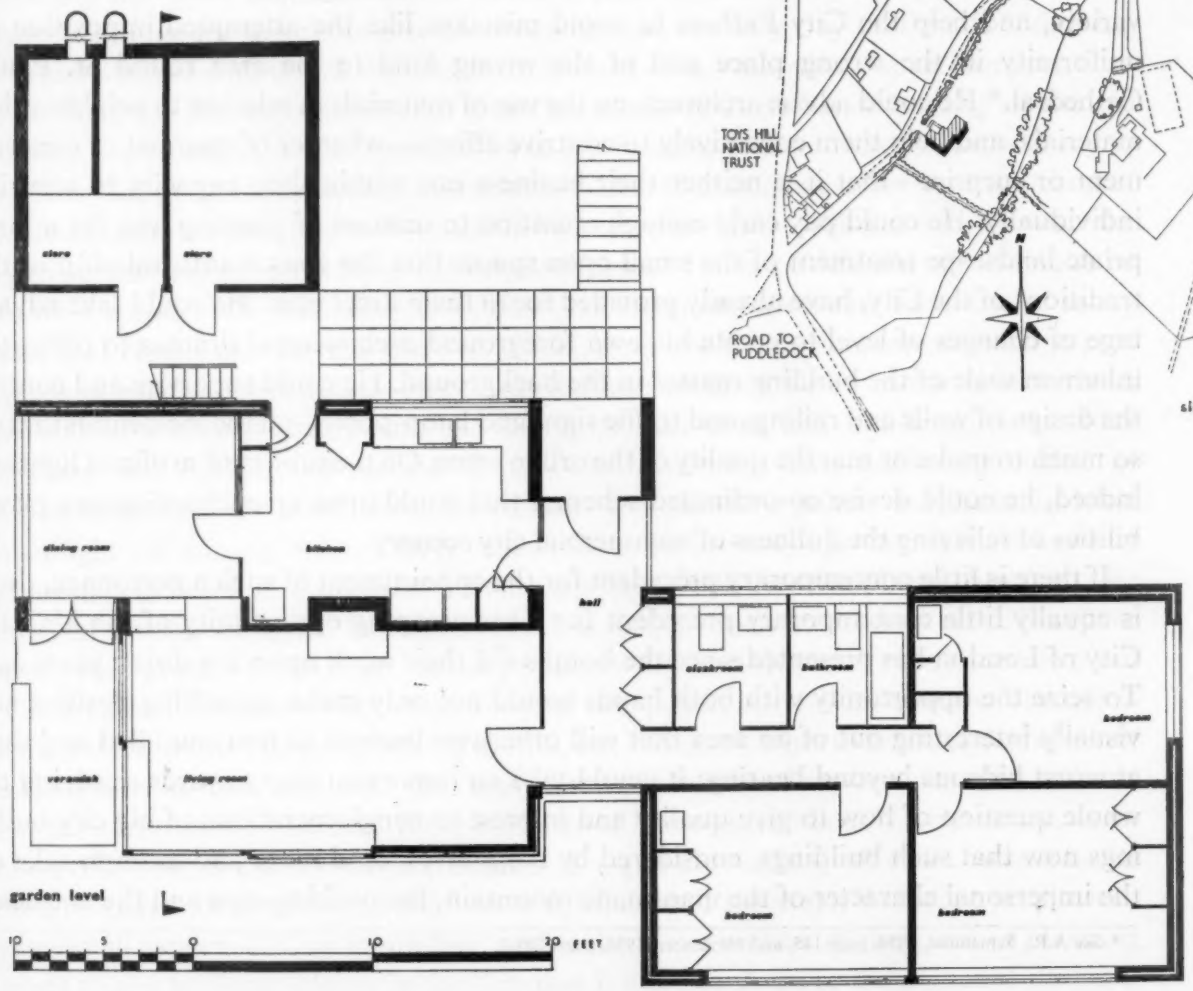
* See A.R., September, 1954, page 145, and November, 1954, pages 281-2.

HOUSE AT TOY'S HILL KENT





site plan



HOUSE AT TOY'S HILL KENT

ARCHITECTS | **POWELL AND MOYA**

1, the house from the south ; the living room is on the left with the garage and boxroom above and behind it.

2

3

4

2, looking south over the Weald past the verandah. 3, the west elevation showing garage and boxroom ; the latter is over the dining room. The garage is faced with brown cedar boarding which will eventually weather light grey. 4, looking through the serving hatch from kitchen to dining room, then out along the sandstone ridge on which the house stands.

The house is on the south scarp of the sandstone ridge that runs west from Sevenoaks parallel to the North Downs; it stands 550 ft. high with a magnificent view southward, a forty-mile stretch of the Weald framed by steep wooded hills. The site is an open steeply sloping field, with access from a small lane running along the north boundary.

The clients required a garage for two cars, and generous outside storage space. This and the desire to make the most of the view and the steep slope gave the design its most striking feature: a garage at normal ground level was impracticable because of the slope and so it was built on the roof of the one-storey house beneath. The house, being down the slope, is farther forward, and there is therefore a wedge left between

5

6

5, the south-west corner of the living room with the window seat, and 6, view through the sliding windows of the living room from the dining room. 7, the dining room with serving hatch on the right.

7

garage, house and hillside; the storage space has been placed here, with a passage containing a stairway leading down from the garage to the rest of the house. Access from the road is by outside steps leading down by the side of the garage. Dining room, kitchen, living room, hall and bedroom wing are all placed at different levels and express the slope of the site internally.

Most of the walls are cavity construction, of 4½ in. brick with an inner skin of 4 in. concrete blocks. On the east corner of the living room and the garage the construction is 4 in. concrete blocks faced with cedar boarding on battens. The floor is cement screed on surface concrete with a damp-proof membrane between, all standing on a hardcore base. The main roof is precast prestressed clay planks with hollow clay filling pots and *in situ* concrete topping, insulated on top with 1 in. cork slabs waterproofed with patent roofing felt laid level and finished with blue-grey granite chippings. The roof of the garage and boxroom is t. and g. boarding and patent roofing felt on timber joists. The windows are purpose made; softwood fixed-lights, painted white hardwood opening lights, and hardwood cills.

8

HOUSE AT TOY'S HILL

9

The external brickwork is either tarred or painted white; the cedar boarding is reddish brown and will weather to silvery grey. Internal walls are generally plastered white, except bedrooms, which are dove-grey. The principal bedroom has olive-grey paintwork and a red door. The living room fireplace wall is fair-faced brickwork with emulsion finish. All plumbing is internal including rainwater drainage; there is a solid fuel cooker also providing hot water, and the central heating is worked from a solid fuel central heating boiler in the kitchen with an electric circulating pump.

10

8, another part of the magnificent view, seen from the window at the end of the hall. 9, looking from the living room up three steps into the dining room. Below the two-way glass cabinet is a store cupboard with a concealed door. The fireplace wall on the right is fair-faced brickwork with a white emulsion paint finish. 10, the house from the east with the bedroom wing on the left, showing a side wall of the garage and boxroom, at road level; brick walls are either tarred or painted white.

HOUSES AT HAM COMMON

ARCHITECTS | **JAMES OUBITT AND PARTNERS**

1, the elevation facing Ham Street, with garage on the right and showing the water storage tank on the roof.

These two small single-storey houses were built on a narrow strip of land near Ham Common, south of Richmond. The site, an old fruit orchard, was the only remaining undeveloped land left of the large estate of the Tollemache family, former owners of Ham House. The local authorities were not only helpful, but supported the architect's desire to erect unconventional buildings. The only rules laid down concerned the positioning of the buildings and the insistence on a fair-faced brick elevation towards Ham Street.

The requirements for the occupants were very different, but in spite of this, it was decided to express them in similar forms. The plan of the second house and a photograph of it are reproduced on page 367. The house

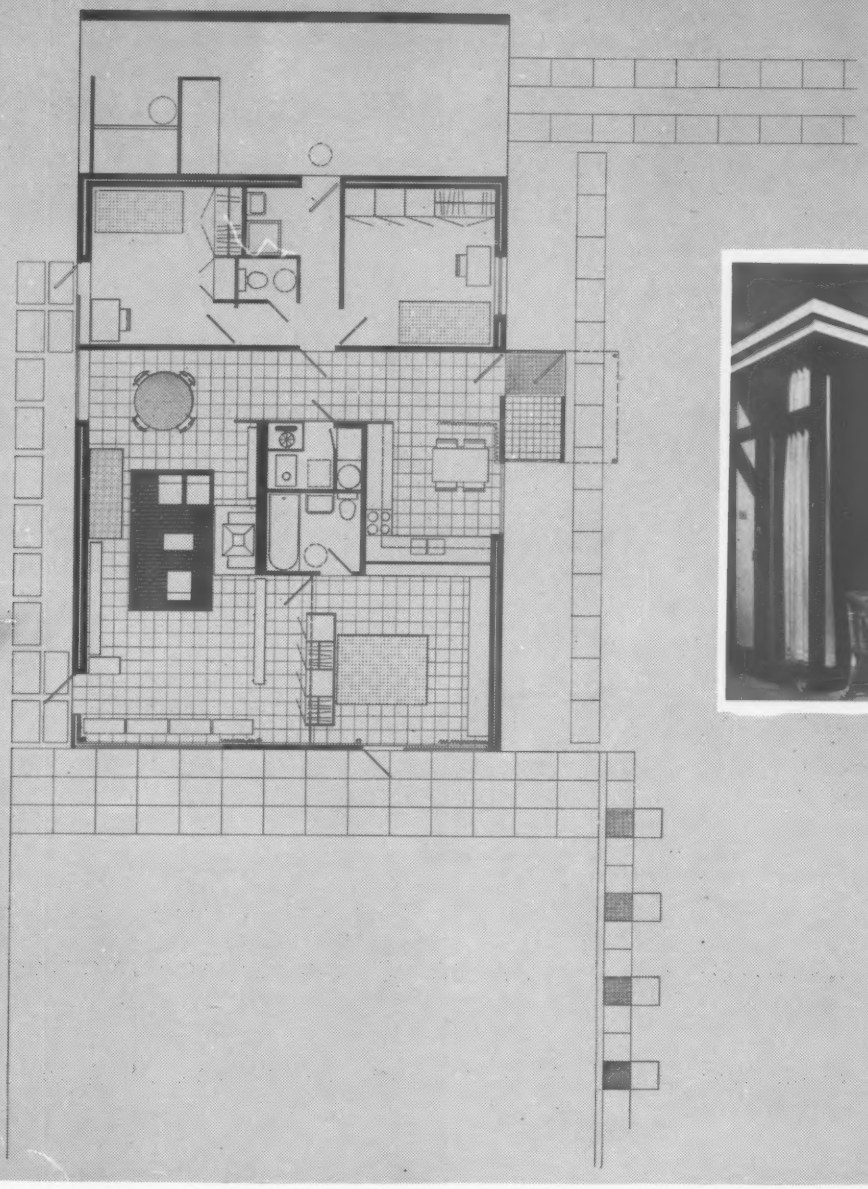
illustrated in detail is occupied by a family of four (the head being one of the partners in James Cubitt's), with parents' bedroom, kitchen and living room forming an open plan around a central core containing bathroom, boiler, central heating chamber and loft. The children's rooms, with their shower and w.c., are completely separate ; the garage adjoins them and can be reached through the shower room. The over-all permissible floor area was 1,500 sq. ft., including a garage of 300 sq. ft. This very small area accommodating three bedrooms, living room, kitchen and two bathrooms posed a difficult planning and visual problem. To increase the feeling of apparent space, the ceiling height was set at 8 ft. 9in. and around the core the number of permanent divisions were reduced to a minimum, and replaced by glass, curtains, bookshelves and cupboards. The divisions between main bedrooms, living room and kitchen were not taken up to full height and the ceiling can be seen extending beyond these rooms through glazed upper portions of walls. To increase the sense of unity further, the same floor covering and colour was used in kitchen, passage, living room and main bedroom. A minimum of glazing divisions was considered important and where possible the glass has been taken down to floor level or 12 inches above. The open fireplace is projected into the living room, smoke being extracted by means of an asbestos-lined, stove-enamelled metal hood. The central core has a low ceiling of 7 ft. and extends 4 ft. above roof level, thereby providing storage space in the loft, which also houses the storage tank, gas meter and flushing cistern for the w.c. in the bathroom. The construction consists of a concrete

2

2, the porch and the kitchen window from the south-east: the second house is beyond the wattle hedge on the right. 3, the kitchen from the entrance. The partition on the left has a glass top through which the bedroom ceiling can be seen. 4, on the facing page, the house from the south-west, with the living room on the left and bedroom (behind the weatherboarded panel and curtains) beyond. 5, close-up of the south elevation.

3

site slab, 11 in. cavity walls with clinker block inner skins and partitions, plasterboard ceilings and ¾ in. asphalt flat roof. The facing bricks are lilac flint lime bricks ; other faces are in flush jointed common fletton bricks with white cement rendering. All the external joinery is hardwood, with ¼ in. polished plate glass. Internal finishes are: dark green thermoplastic tiles and linoleum for floors, plastered walls, pine screen to heating chamber and varnished hardwood to external doors and windows. The curtains are in plain colours of pink, lemon and purple: the fire hood is very dark grey and the hearth is white marble, with black terrazzo inset. Kitchen cupboards, wardrobes and solid doors are white. A gas-fired boiler in the service core supplies hot water and hot air which is blown through a grille to heat the house. Bathroom and kitchen require a minimum of pipe runs, ensuring a comfortable temperature in the bathroom in the coldest weather, and virtually eliminating the condensation of steam. All plumbing and rainwater disposal is internal.



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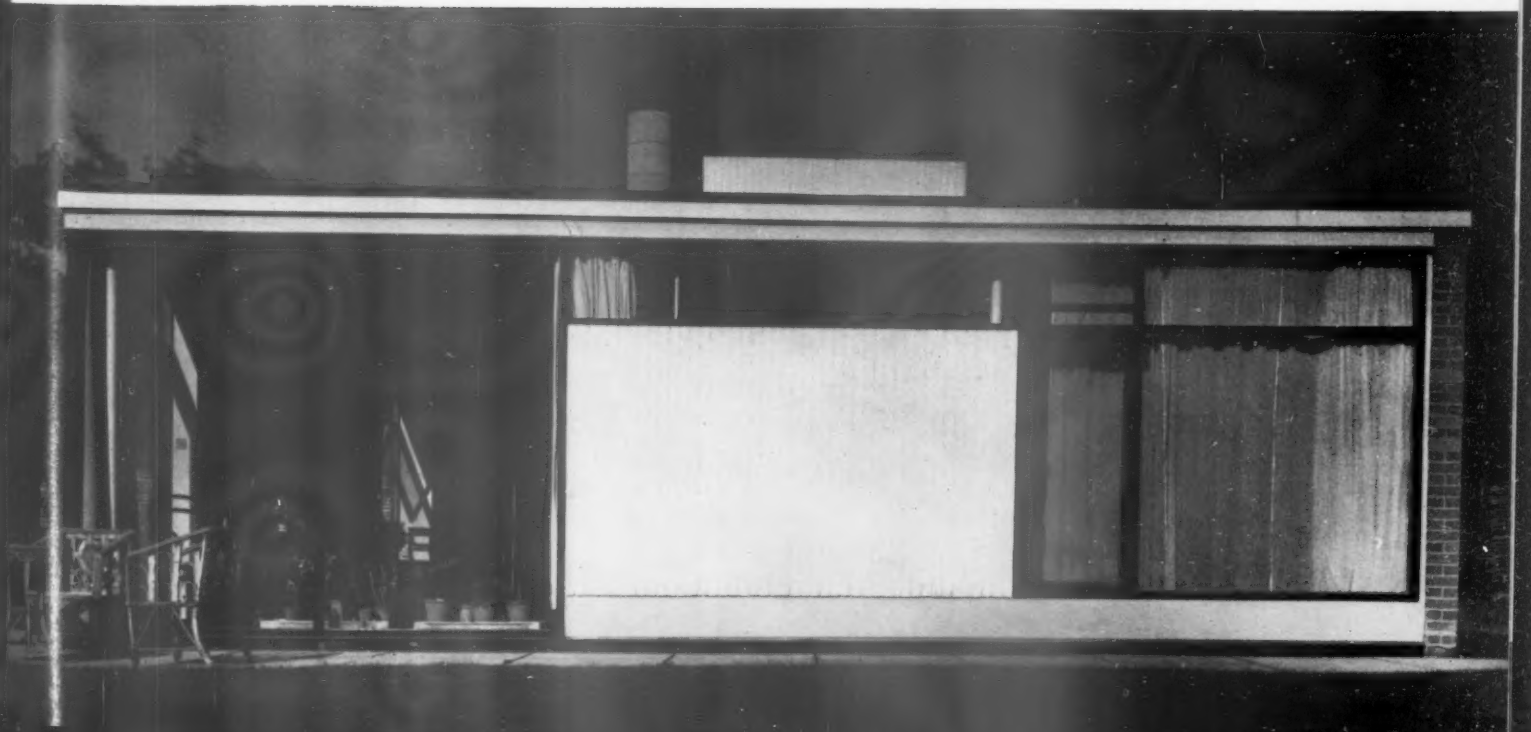
5

scale: 1/12 in. = 1 ft.



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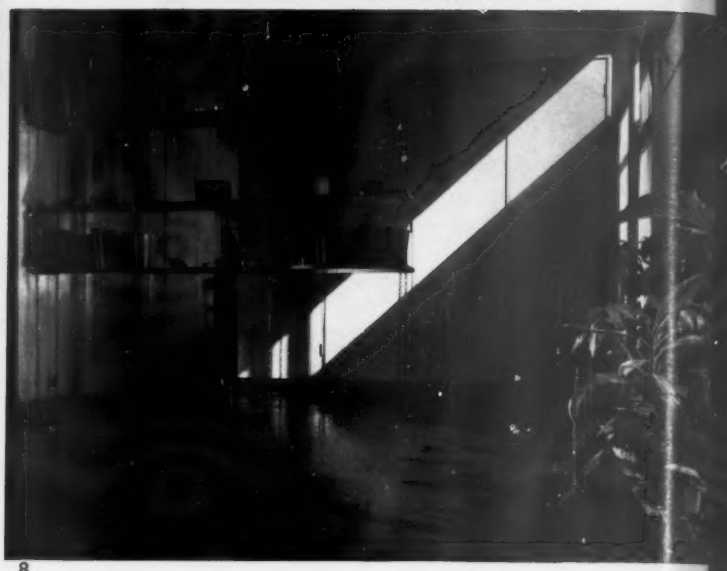


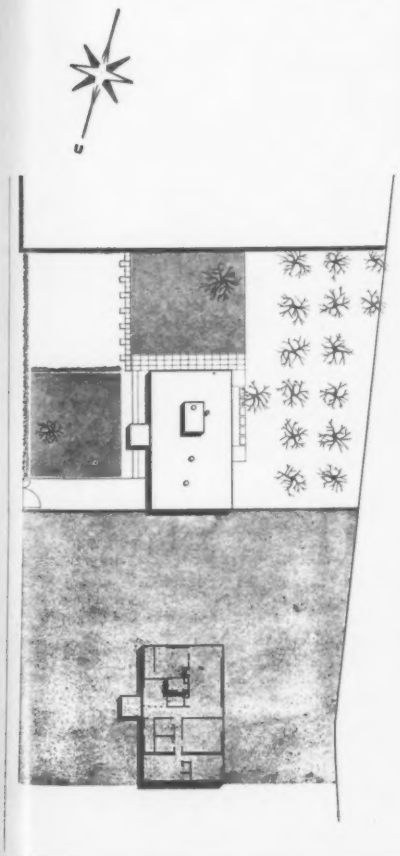
8

6, the north end of the living room seen from the entrance, with the grilles for the hot-air heating system on the left. 7, looking north in the living room, the open fire and its hood is on the right; behind it is one wall of the service core. 8, the part of the living room behind the weatherboarded panel on the south elevation, looking to the bedroom. The partition is made up of wardrobes with a glass partition above. 9, the reverse view of 8, looking through the bedroom door into the living room.

9

7

10, the garden seen down the length of the living room, facing south.



the adjacent house 11, has similar elevations but as the drawing on the left shows the planning is not so free. This view of the south elevation has minor differences which can be seen on comparison with the photographs on page 365.

Sacri Monti were characteristic developments of Mannerist piety in Lombardy—sequences of chapels housing representations of incidents in some sacred story, to be visited by pilgrims in their narrative order and culminating, at the highest point of the processional way, in some such feature as a reproduction of the Holy Sepulchre. These unique combinations of architecture and landscape perambulation are described and illustrated in the article below, and that at Varese, founded about 1600, is illustrated in part opposite *Bottom, left, the pilgrim looking from the portico of the tenth chapel sees the path leading away under an arch; top, at an elbow in the path he sees the climb to the last chapel; centre right, the climb steepens and the path is stepped; and bottom right, having passed on to the church, he looks back and sees the last chapel silhouetted on the edge of the hill.*

Anna Tomlinson

SACRI MONTI

Bernadino Caimi is said to have searched the mountains of Northern Italy before reaching Varallo in 1486 and recognizing it as the ideal site for the first Sacro Monte. He was a noble from Milan, and a minor observant of the Order of S. Francis. He had recently returned from a visit to the Holy Sepulchre in Jerusalem, vowing that he would reproduce the sacred tomb for the benefit of those of his countrymen unable to make the long and costly journey. Owing to the large number of pilgrims in the Holy Land, a procession had been organized. Various 'halts' or 'shrines' held the attention of pilgrims throughout the long route to the sepulchre. Caimi realized that the need for these pauses was even greater in the case of the simple people of Northern Italy. As their religious education consisted almost entirely of *Sacre Rappresentazioni* or Mystery Plays, his shrines took the form of groups of life-size figures, reproduced with all the realism of a scene on a stage. The figures are housed in chapel-like buildings, and are arranged to be visited in a definite order. The scenes tell the story of the Redemption of Christ and culminate in a replica of the Holy Sepulchre at Jerusalem.

One hundred years after the foundation of the Sacro Monte at Varallo, a major reconstruction took place. The Friars had allowed public and private benefactors to erect chapels on sites chosen for their spectacular position, rather than for their relevance to the ordered progress of the pilgrim. Consequently the story itself had become difficult to follow. In an attempt to reduce this disorder many of the chapels were pulled down, some were rebuilt elsewhere, and the connecting path was rearranged. At this time great interest was shown by the Archbishop of Milan, S. Carlo Borromeo, who was born at

Arona on Lake Maggiore in 1538. He was much beloved by the people of the remote mountain valleys, and travelled among them as a humble Franciscan Friar*. Seeing how well the form of worship at Varallo answered their religious needs, he encouraged the building of further sanctuaries.

In 1592 the first chapel of a new Sacro Monte was built at Orta, ten miles to the east, and those at Varese and Oropa soon followed. These later sanctuaries use the same means to develop different themes. At Orta, the twenty chapels house scenes from the life of S. Francis of Assisi, those at Varese the Fifteen Mysteries of the Rosary. The scheme at Oropa, of which only eleven minor chapels remain, was to have portrayed the life of the Virgin Mary in over thirty groups of figures.

Originally the pilgrims were free to enter the chapels, and wander among the statues with their background of fresco. The ravages of souvenir-hunters soon made this impracticable, and the scenes were divided off by wooden or wrought-iron screens. Finally the chapels were built with square or circular porticoes to give shelter. The groups are seen through grilles pierced in the doorways, and are lit from above by lanterns or small windows. Although many of the wood and terra-cotta figures are the work of distinguished sculptors, it is impossible to judge them as 'works of art'. The aim was realism, and the later groups even show the addition of human hair and draperies. These life-size figures have the blank expressionless faces of waxworks.

Today the outstanding feature of interest is the chapels, and it is their design and arrangement that gives each mountain sanctuary a distinctive character. Harmonious grouping is not enough. The progression from one to another must be simple, so that the thread of the story is never lost. Judged by these standards, Varallo is still a failure, in spite of the sixteenth century attempt at improvement. It is evident that the designers at Orta and Varese were aware of this, and determined to avoid the same mistakes. Each in its own way exploits to the full the possibilities of the landscape, while the real purpose of the sanctuary remains the first consideration. At Orta, where the Sacro Monte is built on a wooded plateau above the lake, the sequence is easy to follow, and the chapels are carefully placed among the dense trees. The building of the principal chapel† by Padre Cleto in 1592 is a landmark in the history of the mountain sanctuaries. Circular in plan, it is built to be seen from all sides, and is set on the highest point in the centre of the site. Giuseppe Bernascone, the professional architect of Varese, later recognized the importance of this three-dimensional form, and many of his finest chapels are based upon it. But the simple delight of the first circular chapel was never again attained.

At Orta, the chapels seem part of the surrounding landscape. In contrast, those at Varese have been imposed upon it. Many miles away the line of the pilgrim road can be seen, cutting into the side of the mountain. Bernascone's chapels are built along the two-mile ascent to the summit. Each is a fine exercise in the current style of the Baroque, skilfully placed in relation to its setting. To the sanctuary as a whole, however, the chapels are subsidiary, as were the original shrines on the route to the Holy Sepulchre at Jerusalem. Varese, the last of the Sacri Monti, is the only scheme where the pilgrim way itself is the dominating element. But, from its very dramatic qualities, this sanctuary must lose something of its religious significance. The spirit of contemplation, so admirably preserved among the trees at Orta, has not survived the conscious sophistication of the seventeenth century.

* See 'Inhabited Sculpture', AR, Nov. 1954, page 331.

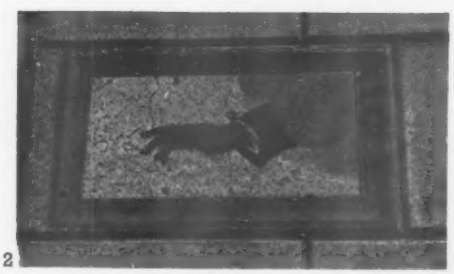
† Lettered 'O' on the plan, page 371.

ORTA

The sanctuary is built on the crest of a promontory, which rises sharply above the Lake of Orta, and is connected to the mainland by a narrow causeway. A steep path descends to the town of Orta San Giulio, with its stone houses clustered round a small piazza on the edge of the lake. In 1584 the town received a visit from the celebrated Archbishop, S. Carlo Borromeo, who was returning to Milan from Varallo. The following year permission was granted to build a series of chapels on the lines of the first Sacro Monte. The theme, the life of S. Francis of Assisi, is reproduced in twenty groups of wood and terra-cotta figures. The chapels are built in the local tradition, with plastered rubble walls, stone roof and granite columns. Padre Cleto came from Novara to supervise the building of the first chapels. Among his designs is the circular chapel of the Stigmata, which, as the climax of the scheme, occupies the highest point on the plateau.

The layout of the site is simple. The small white chapels are set among trees, and a pointing finger in fresco directs the pilgrim to each in turn. He follows the path between large chestnuts and giant magnolias, sometimes emerging to find the next chapel in a clearing ahead of him. Skilful use is always made of the slight variation in the levels of the site, which rises gently towards the centre. Many of the chapels are built on the edge of the plateau, so that, although the trees may have grown beyond the original intentions of the designer, they never completely obscure the view. The pilgrim is continually aware of the lake below—and, beyond, the snow-capped mountains of the Alps.

1


2

1, inset in plan, S. Francis of Assisi, whose life history is the story of this sanctuary, stands above the entrance arch. 2, the pointing finger. The hand of S. Francis emerges from the clouds

3

and directs the pilgrim to each chapel in turn. 3, among the later chapels, this, j, was completed in 1630. The composite capitals and decoration in the pediment are of green serpentine, the columns of granite. Two viewing grilles can be seen, pierced in the wooden door. 4, this chapel, k, is the most elaborate of the series, and was commissioned by a noble from Milan in 1607; a marble statue of the Madonna stands at the end of the arcade.

4

5

5, this circular chapel, l, was among the first to be built, and is dated 1600. The portico is a later addition. 6, built above a retaining wall on the edge of the plateau, an unimpressive chapel, q, has a magnificent view and a sheer drop to the Lake

6

VARESE

stars indicate viewpoints of photos on p. 368.

The Sacro Monte at Varese, founded twenty years after Orta, is very different in character, taking the form of an ascent up a mountain. For many centuries this mountain was a point of defence for the surrounding region. In 389 a sacred image of the Virgin and Child was carried to the summit by S. Ambrogio of Milan, to celebrate a decisive victory over invaders from the North. During the Middle Ages it became a place of pilgrimage, and the chapel which houses the image was rebuilt in 1473. Today this basilica forms the climax of the Sacro Monte. The fourteen chapels leading up to it are set at intervals along the steep mountain road, and contain life-size figures representing the Sacred Mysteries of the Rosary. These Mysteries are divided into three groups—the Joyful, Sorrowful, and Glorious—and between each a triumphal arch spans the roadway. For the first time in the history of the mountain sanctuaries, both the layout and the chapels themselves are the work of a professional architect. The rich patrons from Milan enabled Giuseppe Bernascone of Varese to carry out a scheme more ambitious than any that had gone before.

Approaching the Sacro Monte from below, the first group of chapels is seen framed within the entrance arch. Far above are the later chapels of the series, set on bastions of rock that jut from the side of the

of Orta below. 7, *The chapel of the Stigmata, o, was the first to be completed in* 1592. *It occupies the highest point in the*

7

centre of the site, and contains the scene representing S. Francis receiving the Stigmata on Mount Sinai. 8, *the two chapels, g and h, set among trees, are typical of the simple designs at*

8

Orta. At this point the path takes the form of a wide green lawn bordered by low box hedges. 9, *the view from the Sacro Monte, with the island of S. Giulio set in the centre of Lake Orta.*

9

10, *the Entrance Arch, supporting a statue of the Madonna and Child. Framed within it are the second, third and fifth chapels, b, c and e.* 11, *the fourth chapel has an impressive*

11

copper dome, d. The plan is that of a Greek Cross, enclosed by an arcaded ambulatory. 12, *the fifth chapel, e, seen from above. Behind the distant range of mountains lies the Lake of Como.*

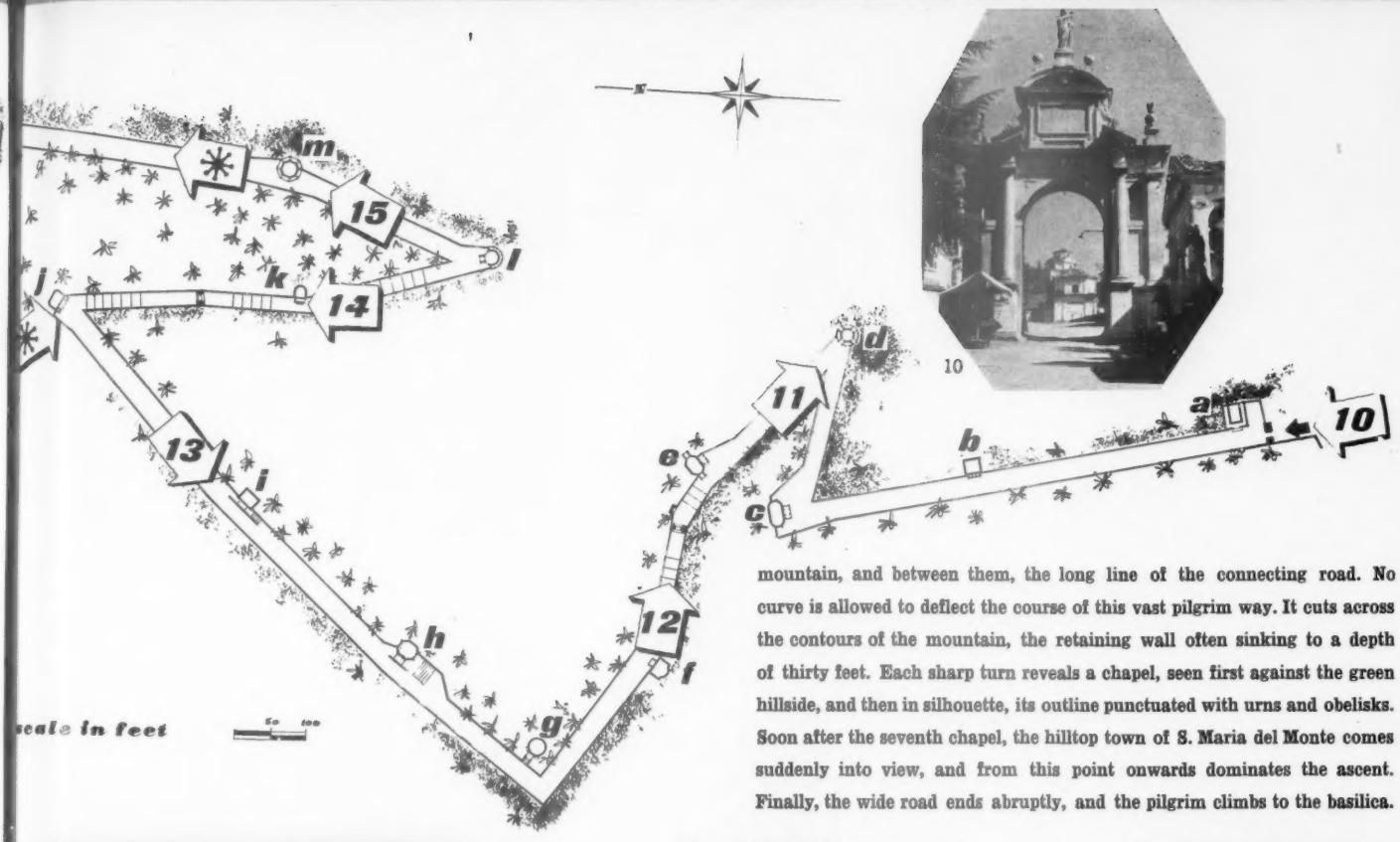
12

13

13, *typical of the smaller chapels, the ninth, i, is built on a steep slope and approached by a flight of steps. The Lake of Varese*

14

is visible far below. 14, *a triumphal arch, seen from the portico of the eleventh chapel, k, marks the transition from the Sorrowful to the Glorious Mysteries of the Rosary. The hilltop town of S. Mar.*

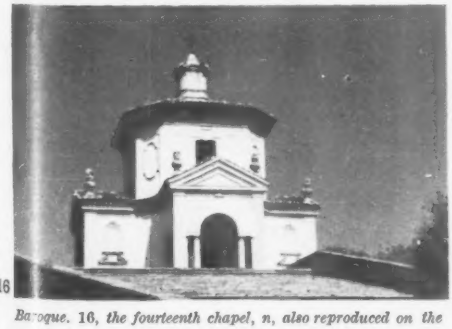


10

mountain, and between them, the long line of the connecting road. No curve is allowed to deflect the course of this vast pilgrim way. It cuts across the contours of the mountain, the retaining wall often sinking to a depth of thirty feet. Each sharp turn reveals a chapel, seen first against the green hillside, and then in silhouette, its outline punctuated with urns and obelisks. Soon after the seventh chapel, the hilltop town of S. Maria del Monte comes suddenly into view, and from this point onwards dominates the ascent. Finally, the wide road ends abruptly, and the pilgrim climbs to the basilica.

15

del Monte can be seen on the summit. 15, *Bernascone of Varese's most original chapel, m. Built in* 1623, *it is octagonal on plan and has the heavy piers and shallow stucco mouldings of the*



16

Baroque. 16, *the fourteenth chapel, n, also reproduced on the* *frontispiece, page* 368. *Full use is made of a dramatic site: the long*

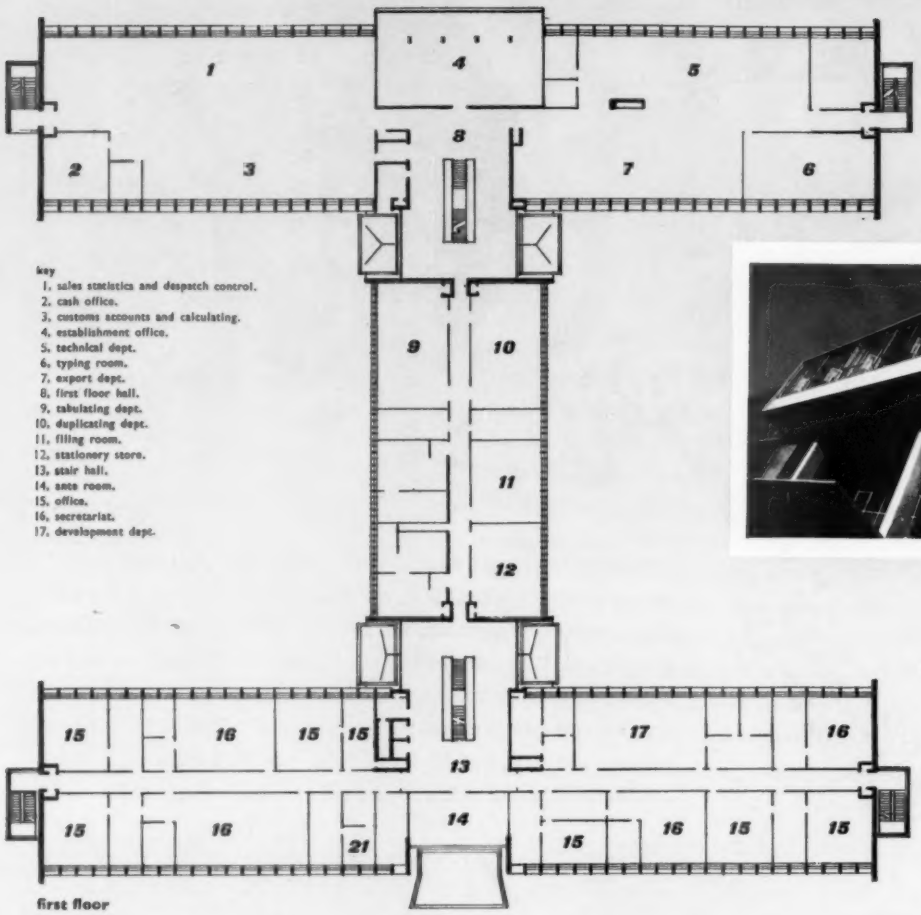
17

cobbled road breaks into shallow steps as it approaches the chapel, and the unbroken lines of the retaining walls lead the eye of the pilgrim towards the shrine. 17, *the final ascent. The flight of steps leads through the houses of the town to the*

18

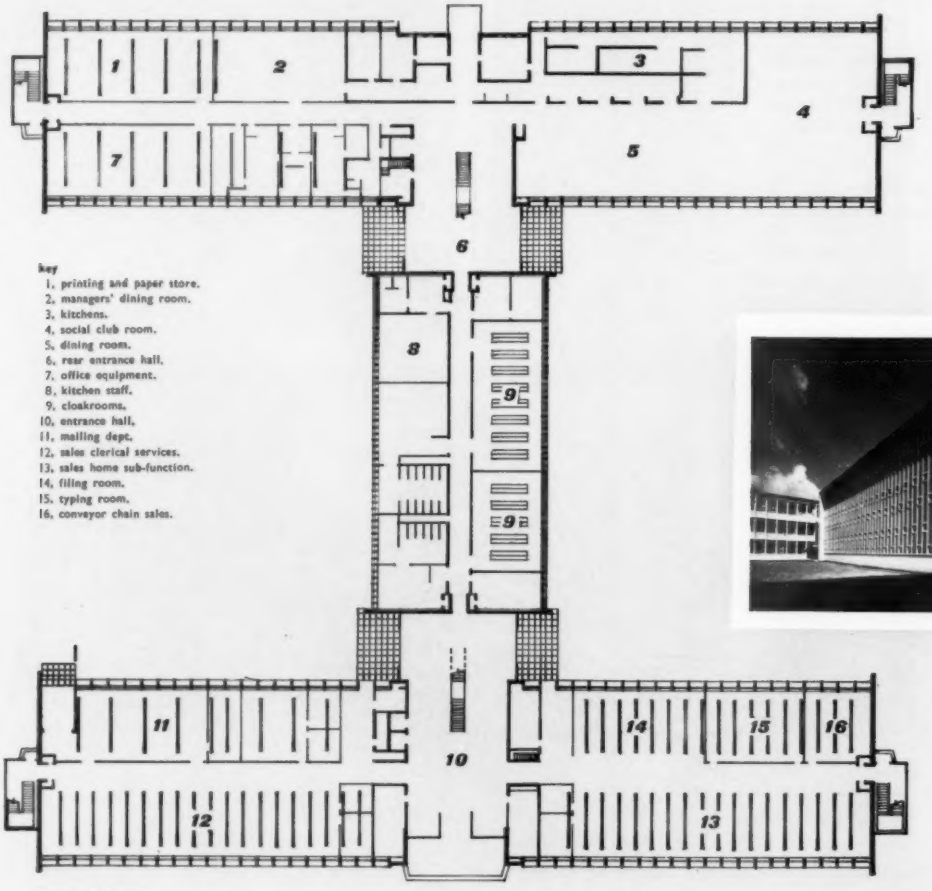
basilica on the summit of the mountain. 18, *the entrance to the small convent church attached to the basilica.* 19, *in the first chapel at Varallo. Adam and Eve, the first scene in the series representing the Redemption of Christ.*

19



key
1. sales statistics and despatch control.
2. cash office.
3. customs accounts and calculating.
4. establishment office.
5. technical dept.
6. typing room.
7. export dept.
8. first floor hall.
9. tabulating dept.
10. duplicating dept.
11. filing room.
12. stationery store.
13. stair hall.
14. ante room.
15. office.
16. secretariat.
17. development dept.

first floor



key
1. printing and paper store.
2. managers' dining room.
3. kitchens.
4. social club room.
5. dining room.
6. rear entrance hall.
7. office equipment.
8. kitchen staff.
9. cloakrooms.
10. entrance hall.
11. mailing dept.
12. sales clerical services.
13. sales home sub-function.
14. filing room.
15. typing room.
16. conveyor chain sales.

ground floor

1

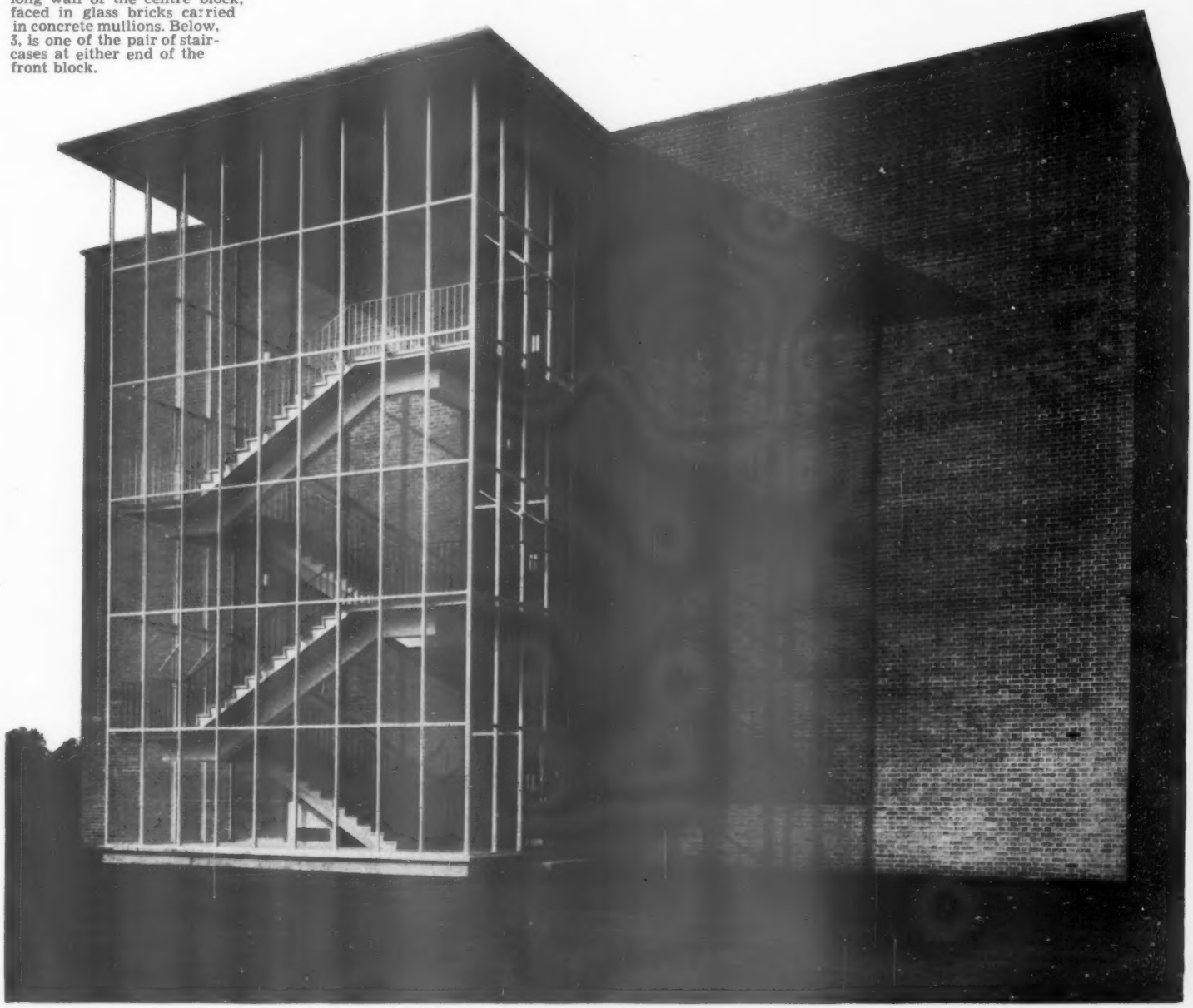
2

1050 100 200 FEET

OFFICES AT WYTHENSHAWE

ARCHITECTS | **CRUICKSHANK AND SEWARD**

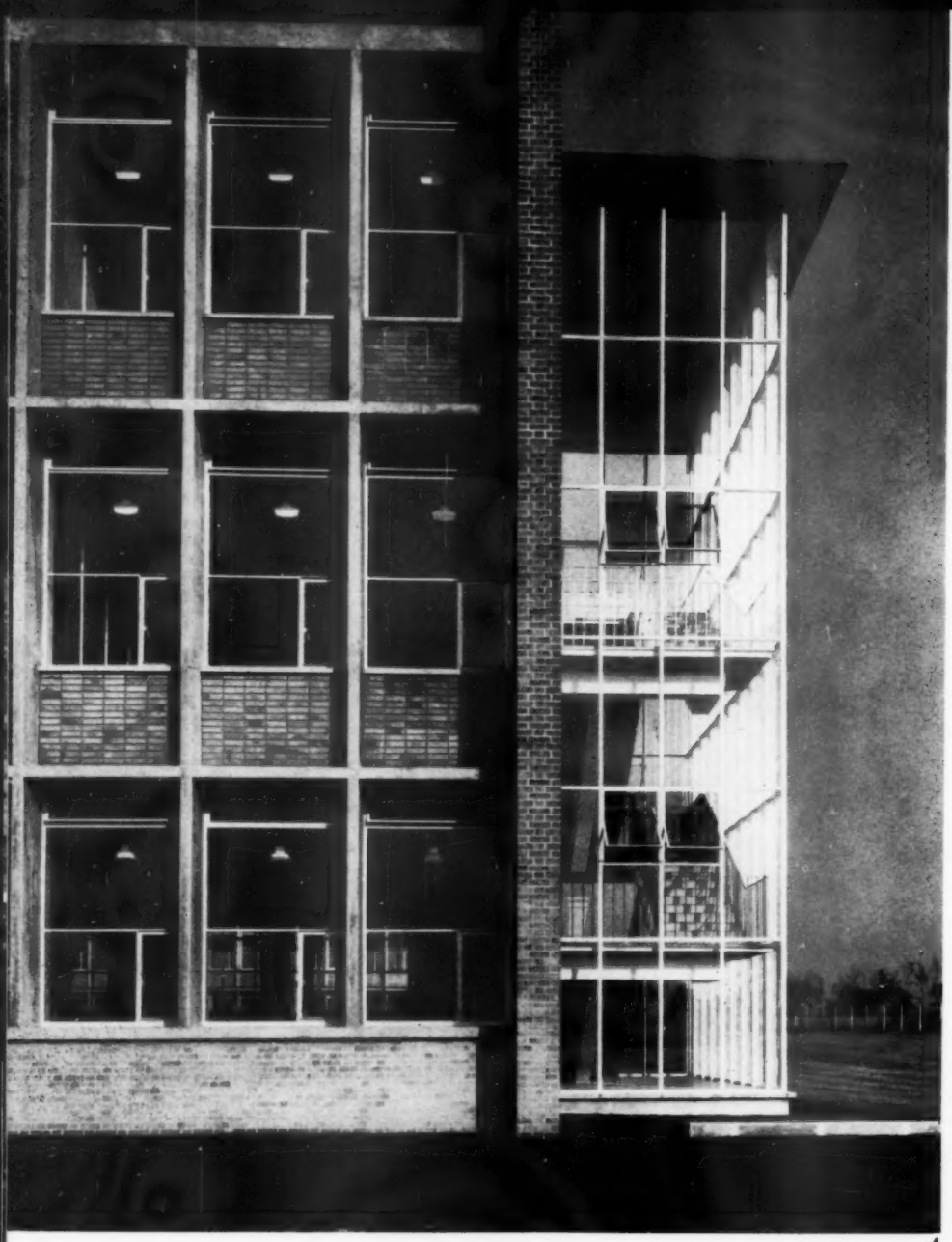
On the facing page are seen: 1, the boxed-out reception and boardroom suite over the main entrance, serving to emphasize the building's function as an axial closure to Ringway Road and 2, the long wall of the centre block, faced in glass bricks carried in concrete mullions. Below, 3, is one of the pair of staircases at either end of the front block.



3

This building, which houses the Head Office and Central Selling and Administrative organisation of Renold Chains, is situated at Wythenshawe, nine miles south-west of Manchester. The site is at the junction of the Styal and Ringway roads and includes extensive gardens, partly completed during the building period. All rooms overlook lawns, and those facing east have a fine view of the Pennines, eight miles away.

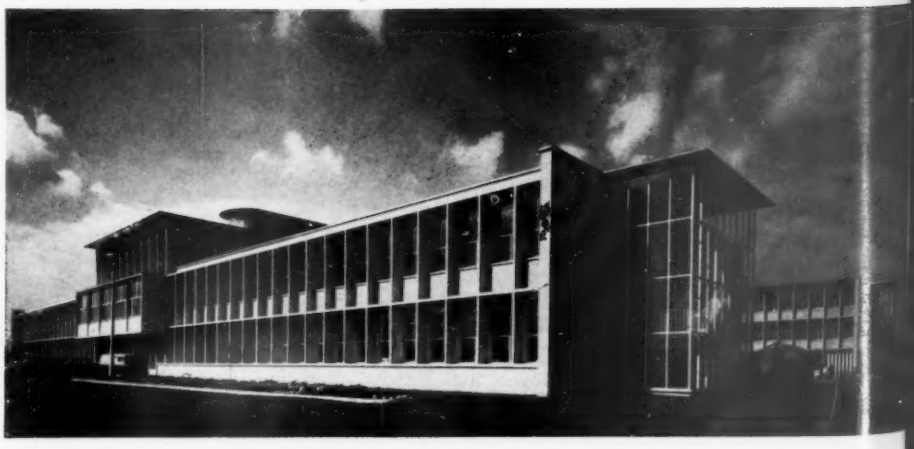
The building is the terminal feature of Ringway road, and is planned symmetrically about its axis in the shape



4

4, the southern end of the front block, showing the glass-enclosed staircase, and part of the main structure, which consists of deep concrete fins, at six feet centres, with a filling of non-structural brick panels and glazing. 5 is a view of the whole scheme from the north. The rear block is as yet of only two storeys, but provision is made to bring it up to three when necessary.

5



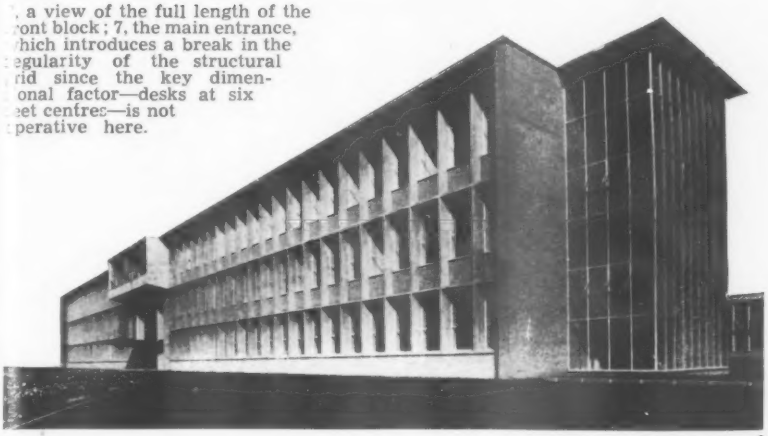
OFFICES AT WYTHENSHAWE

of an H, the two parallel wings containing general and private offices, and the centre wing largely made up of filing and records rooms, stores, cloakrooms and lavatories. The cantilevered structure above the main entrance contains a suite of rooms for directors' meetings. Front and centre wings are three storeyed: the rear wing has two floors, and the third will be added later. The internal layout had to be flexible, so each wing has an uninterrupted level ceiling to allow the sectional partitions to be rearranged in any desired layout. Desks are placed at 6ft. centres; telephone and electrical services are brought to them by concealed floor channels.

The construction throughout is of *in situ* reinforced concrete expressed in the two parallel wings as a honeycomb of vertical and horizontal fins. The desk layout determined the structural grid, and the vertical fins are spaced at 6 ft. centres; they are 5 in. wide, which was found to be the minimum practicable dimension for efficient jointing. The system possesses a high resistance to wind pressure and eliminates the transfer of large moments to the flooring system. The centre wing has glass block walls standing in front of the structural frame, subdivided by mullions and transomes of precast reinforced concrete, the latter, framing opening windows, being attached to the edges of the cantilever floor slabs. At either end there are fully-glazed towers lighting the principal staircases which separate the centre wing from the front and rear wings.

Generally, external walls are built of golden-brown hand-made bricks, contrasting in colour and texture with the exposed concrete members. The small recessed panels under the office windows have continuous perpends, emphasized by raking. The secondary stair towers project at either end of front and rear wings; the staircases are bracketed from the end framing of the wings and ride clear of the walls to reveal the full sweep of the brickwork through the glass. The projected structure above the main entrance, which houses the board room suite, is lined externally with cream travertine, and this is also used to face the two external supporting columns and the walls and ceiling of the main entrance

, a view of the full length of the ront block; 7, the main entrance, hich introduces a break in the egularity of the structural id since the key dimen- onal factor—desks at six et centres—is not perative here.



6

7

6

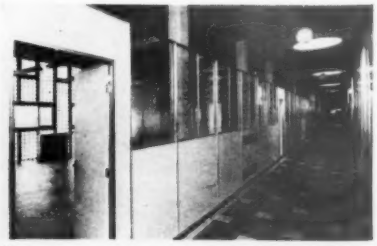
8, entrance to the centre block seen from inside the lobby. 9, the main entrance from under the canopy. 10, the board room. 11, the central corridor, of demountable partitioning, on the second floor of the centre block.

9

10

vestibule. Elsewhere the external reinforced concrete has a natural, rubbed-down finish. Two large areas of concrete walling in the rear wing have an over-all, recessed pattern on their face formed by attaching shaped panels to the sheeting. The major area is left a natural concrete colour, but the recesses are emphasized by being painted blue-grey.

Clear, bold colours are used throughout; the roof structure of each rear secondary stair tower, for example, which consists of a cantilevered, folded slab, has its planes defined by painting them alternately blue and ivory. Terrazzo is used for the floors and staircases of the main halls and landings, thermoplastic tiles for secondary halls. Office floors are linoleum on ¼-in. asphalt. The board rooms are close carpeted, and the approach corridor in this area has a cork tile finish. Heating is by electrode boiler plant and thermal storage vessels charged at 'off peak' periods; low-pressure hot water is circulated through thermostatically controlled convectors, recessed beneath the windows. Electrical and other services are distributed by vertical ducts which connect the subway to each floor level. Local distribution is via floor channels with removable covers; internal plumbing is also concealed in accessible ducts.



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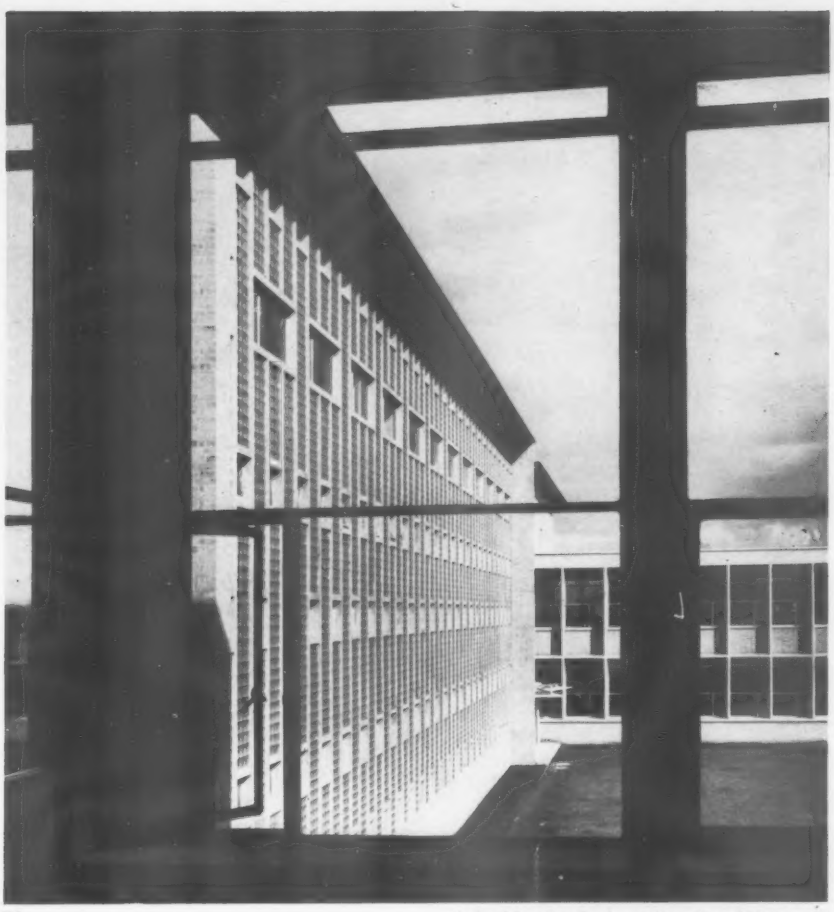
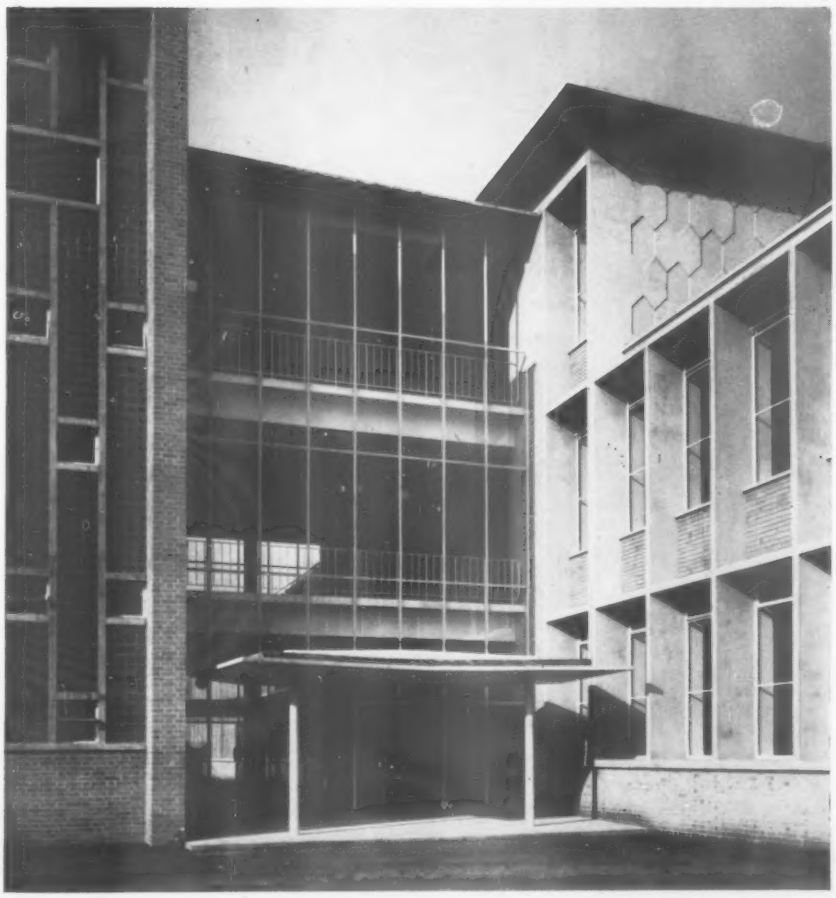


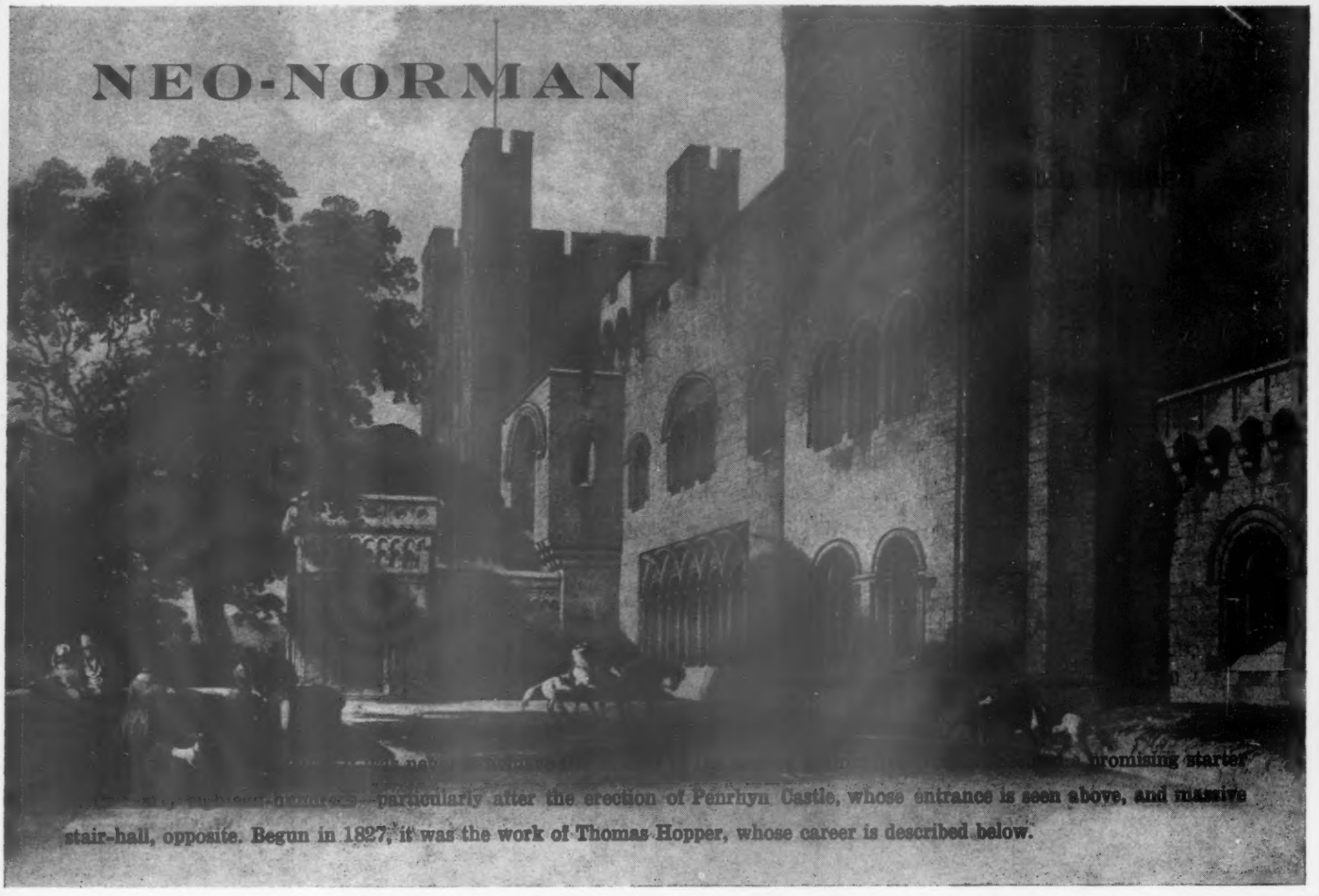
12

12, looking back along the glass-brick wall of the centre block at first-floor level. 13, the rear entrance to the centre block; the side wall, above right, is of patterned concrete formed by the shuttering.

13



NEO-NORMAN



promising starter

—particularly after the erection of Penrhyn Castle, whose entrance is seen above, and massive stair-hall, opposite. Begun in 1827, it was the work of Thomas Hopper, whose career is described below.

It was natural that at the end of the eighteenth century the Gothic Revival should lead to a renewed interest in the Norman or, as it was at first quaintly termed, the Saxon style. Neo-Norman never took the popular fancy, but it has left us in Gosford and Penrhyn castles two curious and important buildings. Both are the work of Thomas Hopper, the outstanding figure of a minor movement.

Hopper was born in 1776 and his considerable practice was due in the first instance to the patronage of the Prince Regent, for whom he built a Gothic conservatory at Carlton House between 1807 and 1812. He himself said that 'it is an architect's business to understand all styles, and to be prejudiced in favour of none.'[1] At Margam Castle in Glamorganshire, at Llanover Court in Monmouthshire, and at Danbury Place and Easton Lodge in Essex—a county where for some forty years he held the post of Surveyor, he worked in the Tudor and Jacobean manners. His reconstruction of Amesbury Abbey (1834) for Sir Edward Antrobus and the restrained dignity of Arthur's Club in St. James's (1826-27) show that he was equally at home in the manner of the Italian Renaissance. It is an impressive tribute to his versatility that Arthur's should have been going up at the very time that he was engaged in his first massive exercise in Neo-Norman. Of the styles favoured by his contemporaries, that of the Greek Revival alone seems to have been uncongenial to him.[2]

Hopper submitted designs for the General Post Office (1820), and for the new Houses of Parliament (1836). His designs for the latter were, he claimed, 'Gothic of the pure English of Edward the Third's time, being homogeneous with St. Stephen's Chapel and the ancient buildings.'[3] Both these ventures involved him in dispute. He accused Smirke of copying his designs for the Post Office, and in the matter of the Houses of Parliament was one of those who violently attacked the Commissioners, though at the same time he let it be known, disingenuously enough, that he 'would rather lose his life than impute improper motives at any gentleman.'[4] He died in 1856, having in middle age refused a knighthood from his early patron, George IV.

Though little had been executed in the Neo-Norman manner when it first attracted Hopper's attention, a cautious interest in the style appears in certain contemporary books on domestic architecture. Richard Elsom's *Rural Architecture* (1795) and Robert Lugar's *Architectural Sketches* (1805) include designs for 'Gothic' castles with round-headed windows which are certainly as much 'Norman' as they are 'Gothic.' Lugar's design is calculated, he says, to achieve 'an awful gloominess productive of grand, majestic, and sublime ideas.' Twenty years later P. F. Robinson in his *Designs for Ornamental Villas* (1827) offers, with diffidence, a 'Residence in the Anglo-Norman Style.' He is still able to speak of a prejudice against the manner, and refers to it as a 'novelty'; he adds, perhaps with truth, that 'the forms of its apertures are inapplicable to our habits.' Three years later in his *Village Architecture* he gives a design for an Anglo-Norman town hall. Richard Brown's *Domestic Architecture* (1841) includes 'an Anglo-Norman Castle' of modest dimensions.

Probably none of these 'Norman' designs were executed, and most contemporary writers on domestic architecture appear to ignore the style. None the less in the first decades of the century a few domestic buildings, conceived in terms of mass, and incorporating 'Norman' or near-Norman features, made their appearance. The architects of these houses were no doubt simply aiming at castles in 'the ancient style,' having bold corner towers and, as a central feature, a large doorway, usually between bastions. In effect, and although pointed windows were retained in the elevations, they achieved something of the proportions, and the feeling, of Norman work. There is an inspiration neither Plantagenet nor Tudor in castles such as Gwrych, Denbighshire (C. A. Busby, 1814), Shanbally, County Tipperary (Nash or Repton), Lowther (Smirke, 1806), and in Lugar's additions to Swinton in Yorkshire (1821), while at Killymoon, County Sligo (Nash, 1803) the Norman feeling is more pronounced, though the round-headed windows still have Gothic sashes. Perhaps it is in Smirke's Great Hall at Eastnor Castle (1815), with its massive round-headed doors and round-headed blind arcades, that Gothic forms seem for the first time to be studiously avoided, though the hall, richly ornamented with Italian marbles, is as much Southern Romanesque as Norman. Two years later (1817) John Patterson of Edinburgh, when rebuilding Brancepeth, produced a gatehouse and other features in a more frankly Norman manner.[5]

It is curious to see how slowly Neo-Norman gained favour with ecclesiastical architects, and how fleeting that favour was. Though, in 1792, S. P. Cockerell reconstructed the nave of the Norman church at Tickencote with a scholarly assurance remarkable for the period, there were few other churches built in the same style before 1840. Examples include St. Peter's by G. Smith at London Colney (1825); P. F. Robinson's church at Leamington Priors, finished before 1827; and additions to Thorney Abbey, dating from 1830. In the next ten years Pugin used the style for St. James's at Reading and St. Michael's at Gorey in Ireland, as did T. H. Wyatt for St. Paul's, Newport, and Charles Fowler for St. Paul's, Honiton, while Colchester acquired two neo-Norman churches. Such churches were exceptional, and it was not until after 1840 that Neo-Norman came into favour. It then did so decisively. Professor Pevsner has noted that in less than a decade twenty churches in a *Rundbogenstil* were built in London.[6] Many others, such as St. Mary the Virgin at Cardiff, All Saints at Tuckingwell in Cornwall, St. Stephen's, Woodville,

[1] *Hopper versus Cust on Rebuilding the Houses of Parliament*, 1837.

[2] For a list of Hopper's buildings see H. M. Colvin's *Biographical Dictionary of English Architects*, 1954.

[3] *Exhibition of Designs for the Houses of Parliament shown at the National Gallery* (1836).

[4] *Morning Chronicle*, August 23rd, 1836. Letter over T. L. Donaldson's signature.

[5] Nikolaus Pevsner, *The Buildings of England, County Durham*, 1953. Brancepeth, p. 60.

[6] Nikolaus Pevsner, *The Buildings of England, London, except the Cities of London and Westminster*, 1952, p. 34. In the same decade the *Ecclesiologist* (1841) advocated the Norman style for church architecture in New Zealand, as being particularly suited to a primitive community. The fashion reached the United States a decade later. See C. L. V. Meek's 'Romanesque before Richardson in the United States,' in the *Art Bulletin* for March, 1953.

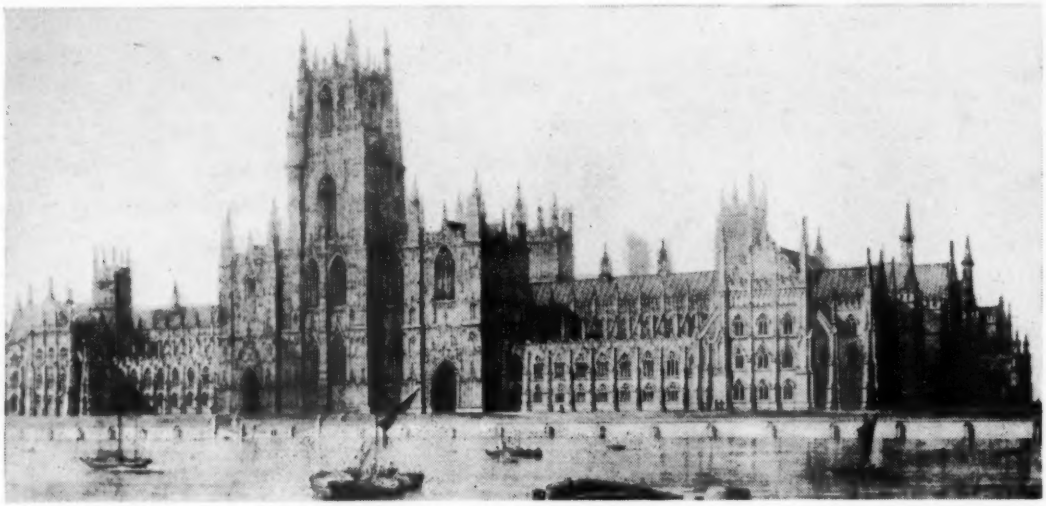
Derbyshire, and T. H. Wyatt's Italianate church at Wilton (1844), appeared in the provinces. The fashion was as short-lived as it was sudden. After 1850 the building of churches in a Neo-Norman manner seems again to have become unusual.

To return to domestic architecture. The approaches to a Neo-Norman style to which I have referred were mostly tentative and differ altogether from Hopper's work. He alone seems to have appreciated the wide possibilities of a Norman Revival. He clearly studied the subject with care and introduced into his 'Norman' buildings a plausible version of pre-Gothic mouldings and motifs such as the chevron and billet. At the same time he borrowed generously and combined with work of Norman derivation such features of later periods as suited his purpose. Thus, without shame, he lent variety to his skylines by the use of elaborate crenellation, employed heavy machicolation to give added weight to towers already massive, and, if need be, threw out a dramatic barbican to emphasize a gateway. Such

1, *Gosford in County Armagh*, 1819, *Hopper's first exercise in Norman Revival.*

'Norman' style. On the north front unfortunate additions have obscured Hopper's work; they demonstrate all too clearly the dulness of Neo-Norman in the hands of an architect less bold.

The interior of Gosford shows, as does his later work at Penrhyn, how difficult Hopper found it to devise a 'Norman' idiom suited to the decoration of nineteenth century apartments. It is cramped and oppressive. Only the Dining Room, with engaged pilasters of pink Armagh marble and white plaster decoration, is effective and pleasing. Some of the carving at Gosford was undertaken by John Smyth, Master of the Dublin Society's Modelling School, and like his better-known father, Edward Smyth, a talented sculptor.[8] Though the castle has been for nearly a generation empty and unfurnished, Hopper's careful and solid building shows no sign of decay. Possibly his masonry is thicker than any which had been built in the British Isles since medieval times. It is characteristic of the architect that the gigantic wall which encircles the park should be provided with a coping of cumbrous



2, *the Houses of Parliament: Hopper's rejected design in 'Gothic of the pure English of Edward the Third's time.'*

historical latitude was amply justified in the results, and it is only in his interiors, so much less successful, that his eclecticism is disturbing.

Hopper's Neo-Norman work apparently begins in Ireland. After a fire in 1816, Nash was employed by Lord O'Neill to rebuild Shane's Castle, County Antrim, but before the work was finished some misunderstanding arose and Hopper, to whom one is tempted to attribute the great round tower at Shane, replaced him.[7] Probably Shane led to Gosford. At all events by 1819 Hopper was already engaged in the neighbouring county of Armagh on his vast Neo-Norman castle for the 2nd Earl of Gosford. It must be regarded as one of the most original buildings of the first half of the nineteenth century for it has apparently no immediate antecedents. The immense granite castle, reputed to be the largest pile in Ireland, with over a hundred and fifty rooms, sprang fully fledged in its elaborate Neo-Norman detail from Hopper's imagination. A three-storeyed keep, such as Hopper was to repeat on a yet grander scale at Penrhyn, and a massive round tower containing a circular drawing-room are the salient features of the main elevation. Both are ponderously machicolated and achieve those effects of weight and gravity which are the hallmarks of Hopper's

[7] Account book preserved at the Estate Office, Gosford Castle, County Armagh. Shane's Castle is now a ruin.

boulders, undressed and set side by side upon the walltop.

Penrhyn was begun in 1827, when work at Gosford was still in hand, on the site of a medieval castle, 'gothicized' only a generation earlier by Samuel Wyatt. It stands superbly at the northern end of the Menai Strait. A park provides the green foreground; beyond stretch in one direction the expanse of Beaumaris Bay and the promontory of Great Orme's Head; westward lies Anglesey; to the south and east rise the masses of Snowdonia. Hopper's patron was G. H. Dawkins, nephew of that James Dawkins who accompanied Robert Wood on the remarkable expedition which, in 1753, resulted in the publication of *The Ruins of Palmyra*. Dawkins succeeded to the Penrhyn estates as cousin of Richard Pennant, Baron Penrhyn, and took the name of Pennant. With Penrhyn he inherited the Bethesda slate quarries and an immense fortune. Where Gosford is large, Penrhyn is cyclopean. Hopper's pile is over 200 yards long, and the Great Hall, more than sixty feet square, rises through three storeys. The pronounced ecclesiastical flavour of the Great Hall is due in part to the vast piers with their engaged columns which form an aisle down one side, to the continuous arcades at first-floor level which recall triforia, to the ambitious

[8] Account book preserved at the Estate Office, Gosford Castle, County Armagh. Payments were made to John Smyth in 1824.

stained-glass windows, and to the ribbed and quadripartite vaulting. Tradition states, without reason, that the hall was based on the nave of Durham cathedral; it certainly realizes those effects of space and mass with which Hopper was preoccupied and which, it must be confessed, he achieved more often and more successfully in his exteriors. The four-storey keep, which once lodged Queen Victoria and the Prince Consort, is on the scale of the largest tower-keeps of the Middle Ages. It measures, externally, about 62 feet across, and, from above the batter, the walls rise over 115 feet to the top of the turrets. It has been compared to the keep at Rochester, Hopper's birthplace, but in fact it is closer to that of Hedingham.

The body of the castle seems to have been completed about 1837, when the stained-glass windows by Thomas Willement (1786-1871), in the style of the thirteenth-century glaziers, were inserted in the Great Hall. It is possible that the keep was not finished until a year or two later. The whole building was constructed of Mona 'marble' from Anglesey and local craftsmen were employed. The finished castle was not, of course, the uncompromising Norman which Dawkins Pennant and his contemporaries no doubt believed it to be. Like Gosford, it possesses, and very properly, a strong nineteenth-century flavour, while the treatment of the outer walls and towers often recalls the military architecture of the fourteenth and fifteenth centuries, and the lavish decoration of the interior sometimes comes as close in its effect to Byzantine and Arab treatment as to Anglo-Norman. Such a blend of styles does not detract from the monumental quality of the building. In particular the keep and the south-west front, where the giant battlements tower above the comfortable fenestration of the library, are impressive. Rightly described by an enthusiastic traveller in 1844 as 'stately, massive and stupendous,' Hopper's castle is the most important building of the Norman Revival.[9]

Inside and out Penrhyn is the creation of a single mind, for Hopper was given a free hand not only with the building of the castle but with the design and choice of much of the furniture. Both his decoration and furniture—the latter even to the *tables de nuit* in the bedrooms—were boldly 'Norman' as Hopper conceived that style. Over a century ago a visitor found them 'far from elegant . . . yet exceedingly curious.'[10] The visitor to-day will probably agree. In the library Hopper's carving and plaster decoration, particularly in the moulded arches, in the deeply recessed windows, and in the ribbed and bossed ceiling with its tortured arabesques, are at their most extravagant. The room, for Penrhyn, is low and creates the effect of some cavern where natural forms have run riot. The chimneypiece is of Penrhyn slate. The piers with their clustered columns speak of stalagmites, the tormented legs of the monumental writing-table recall the gnarled roots of trees. In its own way the room is successful. The same can hardly be said of the Grand Staircase. There the decoration is equally lavish, but the profusion of carved stone and the 'Norman' and allied motifs strike a note sounded less forcibly elsewhere in the interior of the castle. It is a note incongruously reminiscent of Arabo-Byzantine art. The Drawing Room, less elaborately treated, is, perhaps, more sympathetic to contemporary taste. It is certainly lighter in feeling as though the architect made concession to the social occasions for which the apartment was to provide a setting.

Soon after the castle was finished and furnished, lithographs of the exterior and of the formal apartments were prepared by a draughtsman named Hawkins. Little has been changed, and even the interior with its 'Norman' furniture of the 1830s appears much as it did over a century ago. It is a striking monument to an architect of courage and imagination, as well as to the minor architectural revival of which he was the outstanding exponent.[11]

[9] L. S. Costello, *The Falls, Lakes and Mountains of North Wales*, 1845.

[10] L. S. Costello, *ibid.*

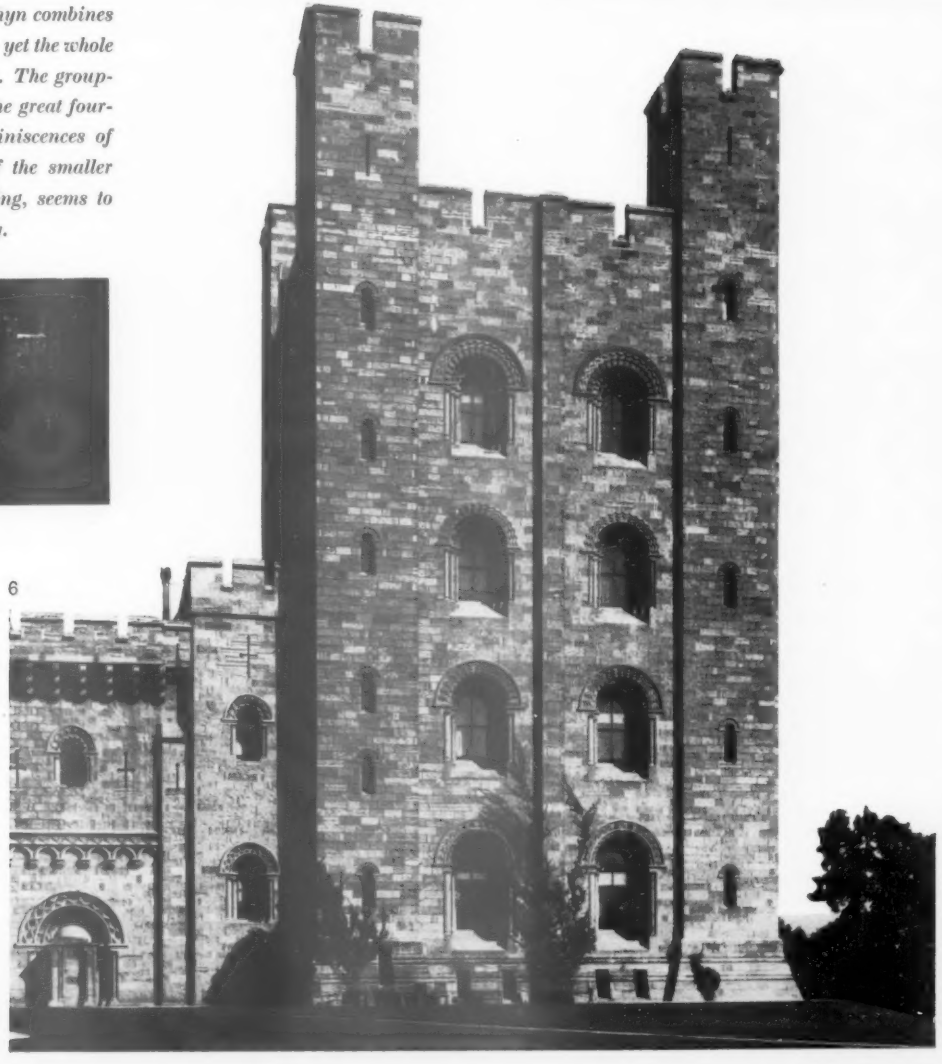
[11] In the absence of contradictory evidence, it is reasonable to attribute to Hopper the 'Norman' additions to Picton Castle in Pembrokeshire, and the stables.

3, *Thomas Hopper, architect*, 1776-1856.

4

Externally, Thomas Hopper's magnum opus at Penrhyn combines elements of Norman with those of later castle-building, yet the whole contrives to have an early-nineteenth century flavour. The grouping is pure Picturesque, as the air-view, 5, reveals; the great four-storey keep, 6, is undoubtedly Norman in its reminiscences of Rochester and Hedingham; but the combination of the smaller elements, 4, in spite of its neatly Norman detailing, seems to suggest military architecture of the fourteenth century.

5

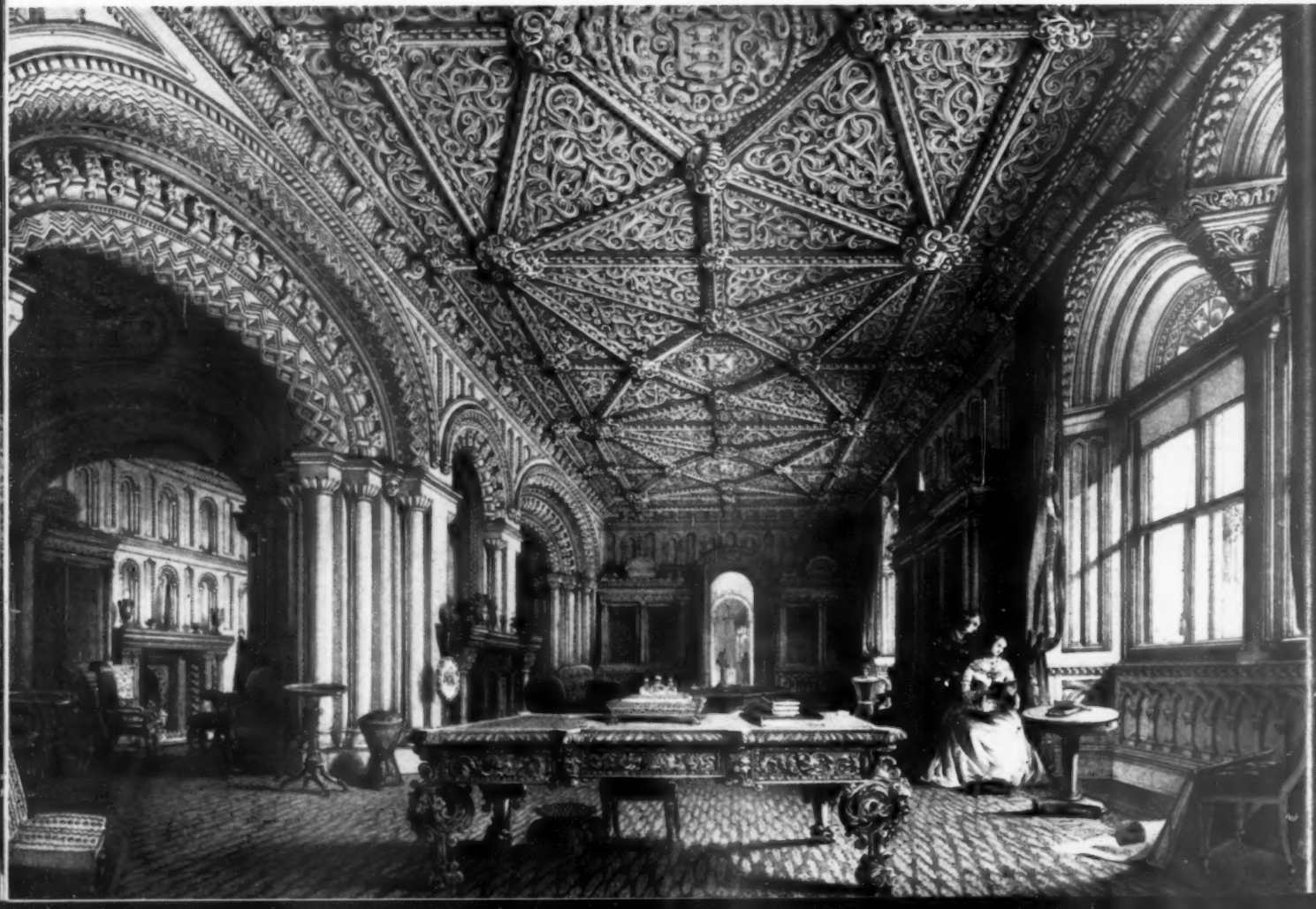


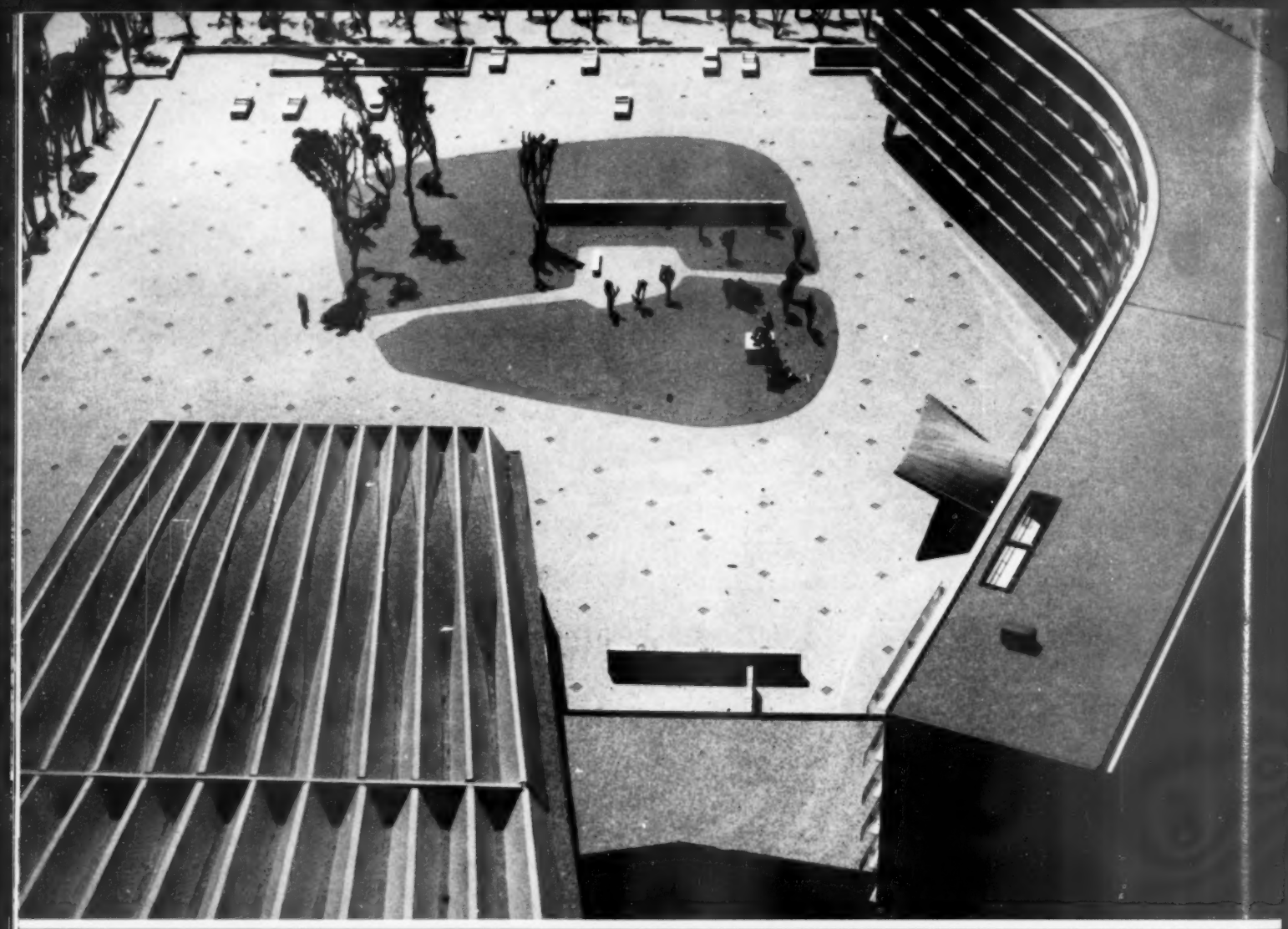
6

Hopper's deviations from Norman purity are much more marked in his interiors where, without the support of that strong sense of massing which gives strength to his exterior work, his touch is less happy. Nevertheless there is a fine domesticated opulence about the library at Penrhyn, 8, in spite of its restless surfaces. In the great hall, a large, confident and characteristically nineteenth-century sense of space comes to his aid, and the effect is as powerful as ever today, since comparison of the photograph, 7, and Hawkin's lithograph, 9, opposite, shows that this unique monument survives untouched in its original condition.

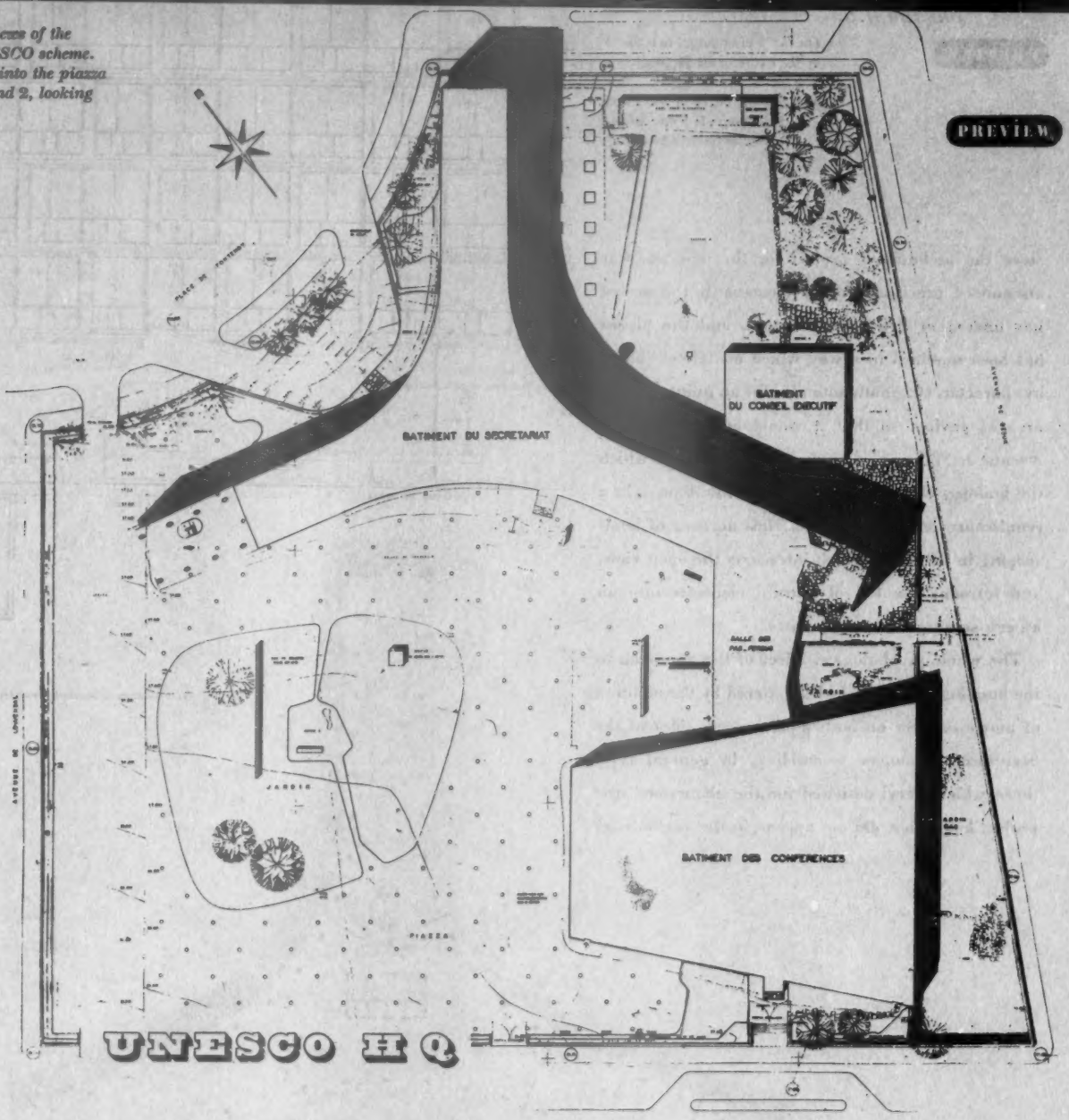
7

8





On the facing page, two views of the model of the revised UNESCO scheme. 1, looking down into the piazza from the south and 2, looking across it from the west.

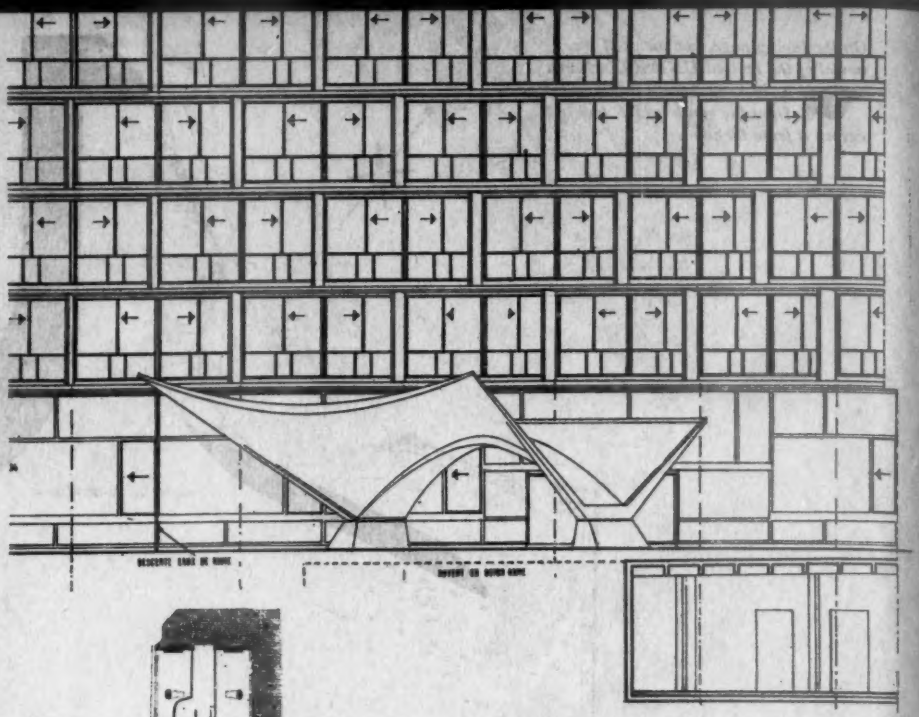


ARCHITECTS | **MARCEL BREUER, BERNARD ZEHRFUSS AND PIER LUIGI NERVI**

Though town-planning difficulties led to the abandonment of the site originally proposed, and thus to the abandonment of the very interesting first project for the buildings (described on page 410 of AR for December, 1952) work on the designs for UNESCO headquarters in Paris has proceeded in a quiet and businesslike manner, and the revised scheme, for a site on the Place de Fontenoy, for which preliminary designs were announced in May, 1953, is now completed, has been cleared by town-planning authority, and construction can begin. The scheme comprises three main elements grouped about an open piazza: the Secretariat block, a Y-plan, of which two arms continue the loop of buildings round the Place de Fontenoy; the Assembly and Conference building, housed under a folded-slab canopy whose form is characteristic of the work of Pier-Luigi Nervi, engineer to the project; and a modest one-storey building to house the deliberations of the Executive Council. As architectural symbolism the visual dominance of Secretariat over Assembly is open to the same questionings as in the case of UN headquarters, but the insignificance of the Executive building carries self-effacement by the activators of policy to an almost neurotic extreme.

PREVIEW

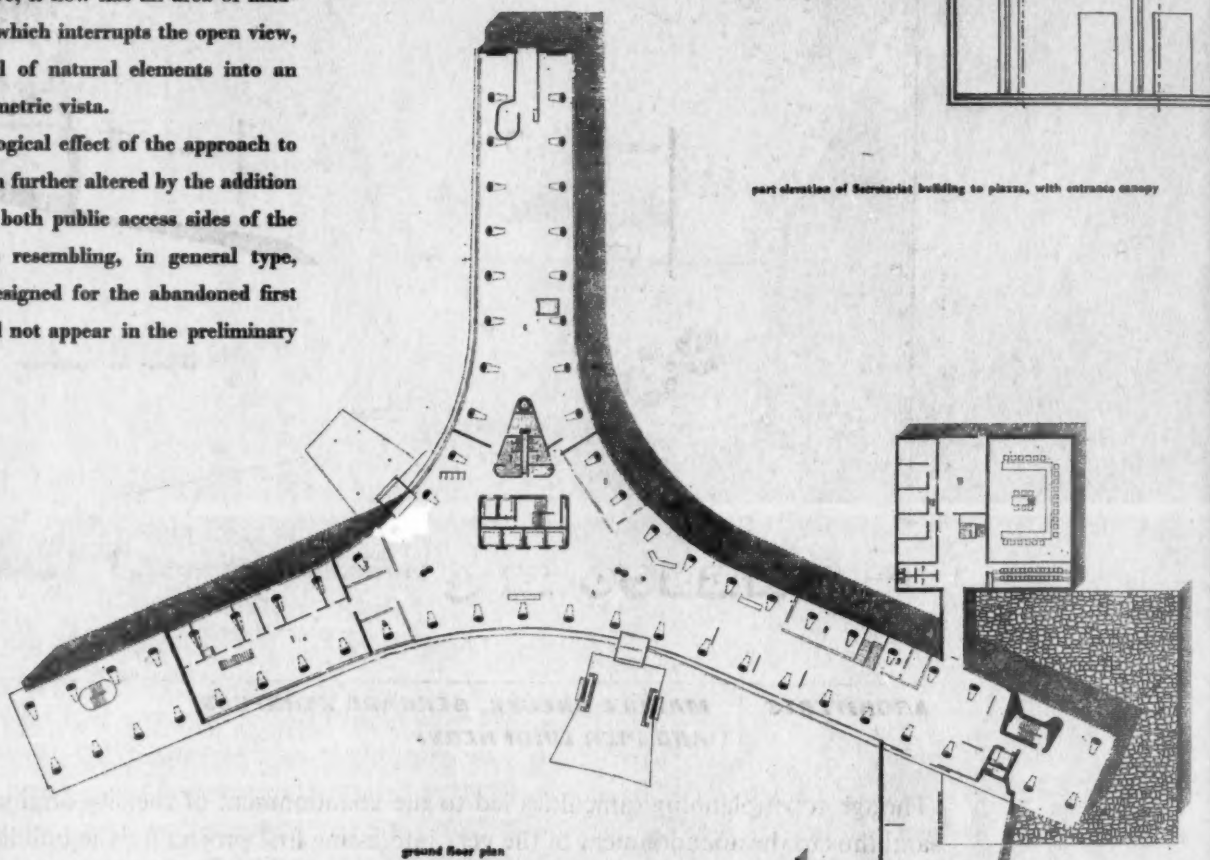
On the facing page, two views of the Secretariat 3, the facade which will complete the curve of the Place de Fontenoy. 4, from behind the conference building.



part elevation of Secretariat building to piazza, with entrance canopy

Since the preliminary project for the new site was announced practically every element in the design has undergone detail modification, and the piazza has been modified in a way which completely alters its character. Originally intended for an uninterrupted area of paving, so that it would appear from the Avenue de Suffren as a kind of abstract field on which the building elements were disposed like figures in a renaissance perspective, it now has an area of landscaping in its centre which interrupts the open view, and introduces a foil of natural elements into an otherwise purely geometric vista.

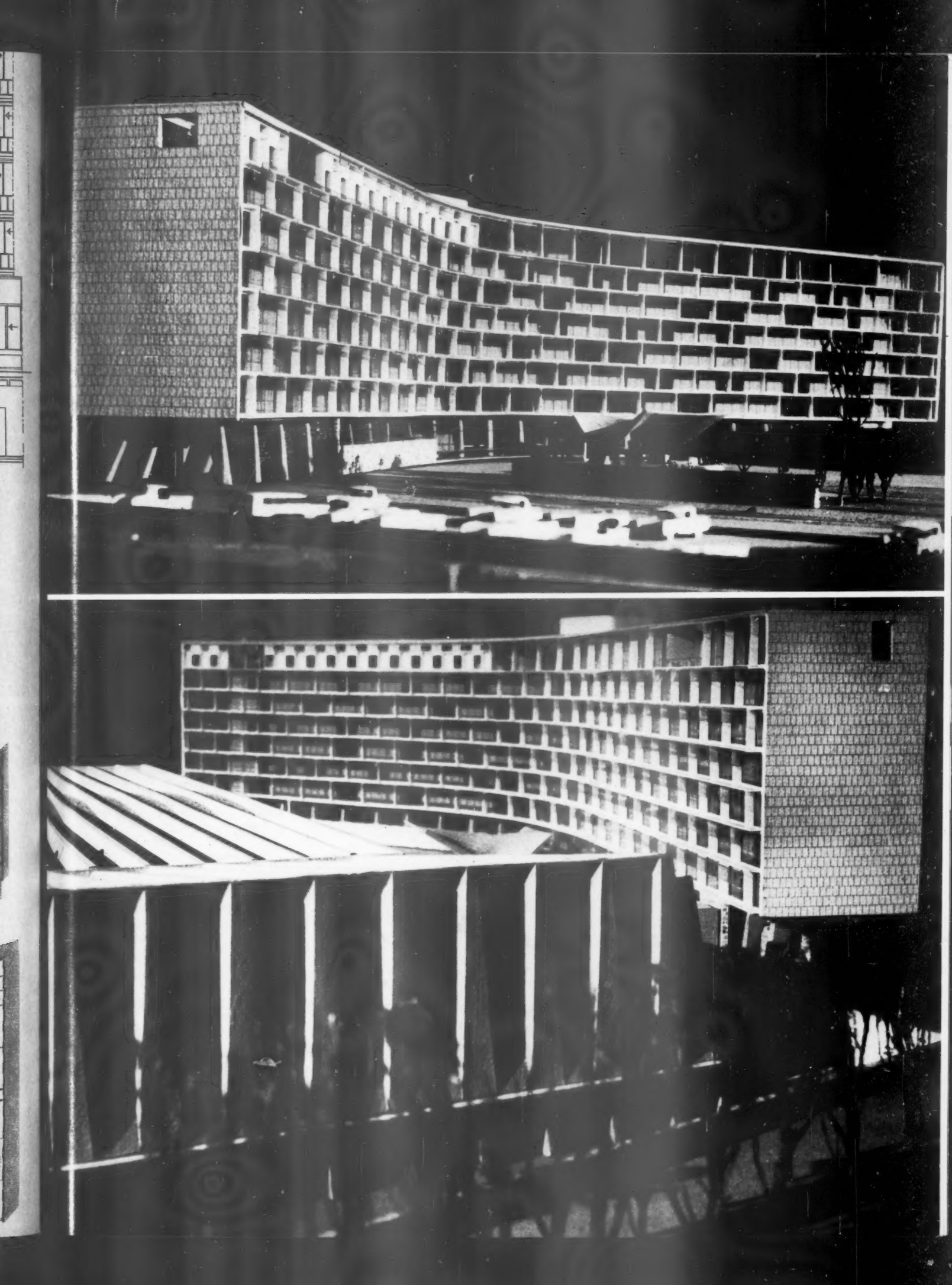
The whole psychological effect of the approach to the buildings has been further altered by the addition of portes-cochere on both public access sides of the Secretariat—canopies resembling, in general type, those which Nervi designed for the abandoned first project but which did not appear in the preliminary

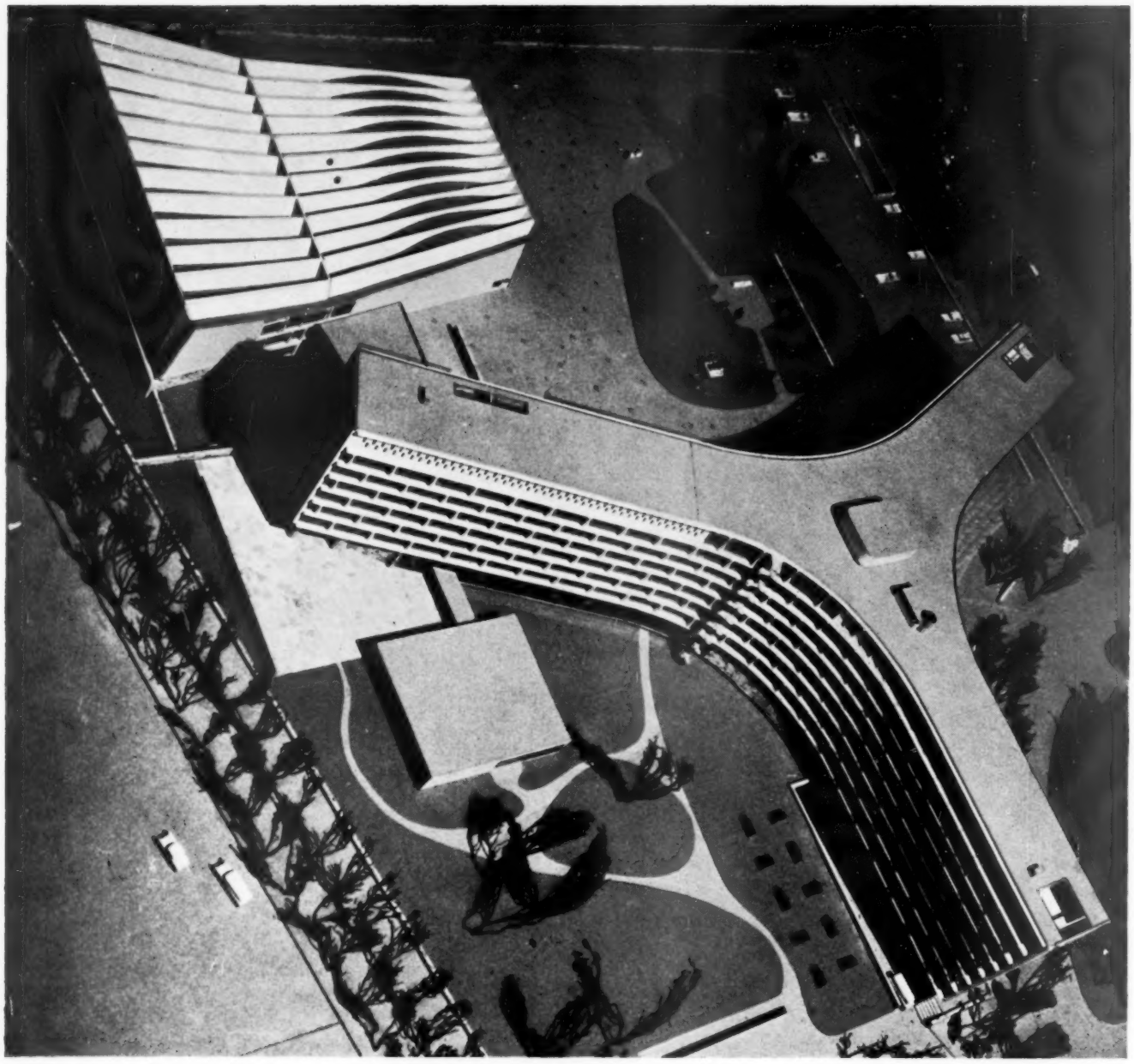


ground floor plan

key:
1, library.
2, UNESCO information room.
3, UNO information room.
4, grand hall.
5, bookstall.
6, printing office.
7, lavatories.
8, bank.
9, accommodation bureau.
10, Executive Council room.
11, salon.
12, offices.
13, lobby.
14, delegates' bar.
15, foyer.
16, salons.
17, documents.
18, committee room.
19, delegates' reception.
20, interpreters' cabins.
21, conference room.
22, cloakrooms.
23, assembly hall.

scheme for this site. The Secretariat remains a block of Y-plan form, but in its final version it is no longer symmetrical and the arms are of constant section instead of tapering in plan toward their ends. This has led to a considerable simplification of the concrete structure as the crosswise spans between columns are now standardized throughout most of the scheme. The only structural irregularities are now concentrated in the centre of the block, where lifts, services and staircase access rise through the full height of the building, but here, too, there has been considerable simplification of plan. The block remains of eight-storey height, this figure, like the need for a curved





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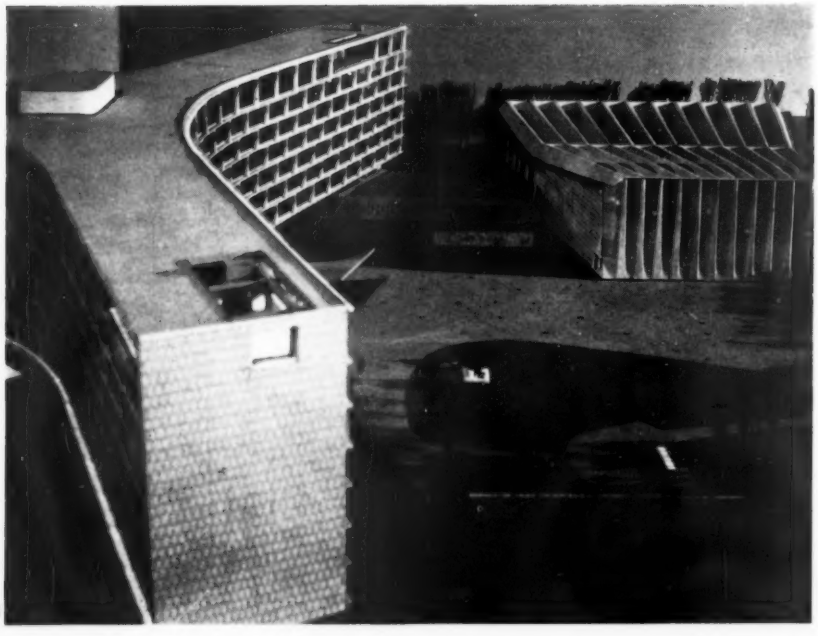
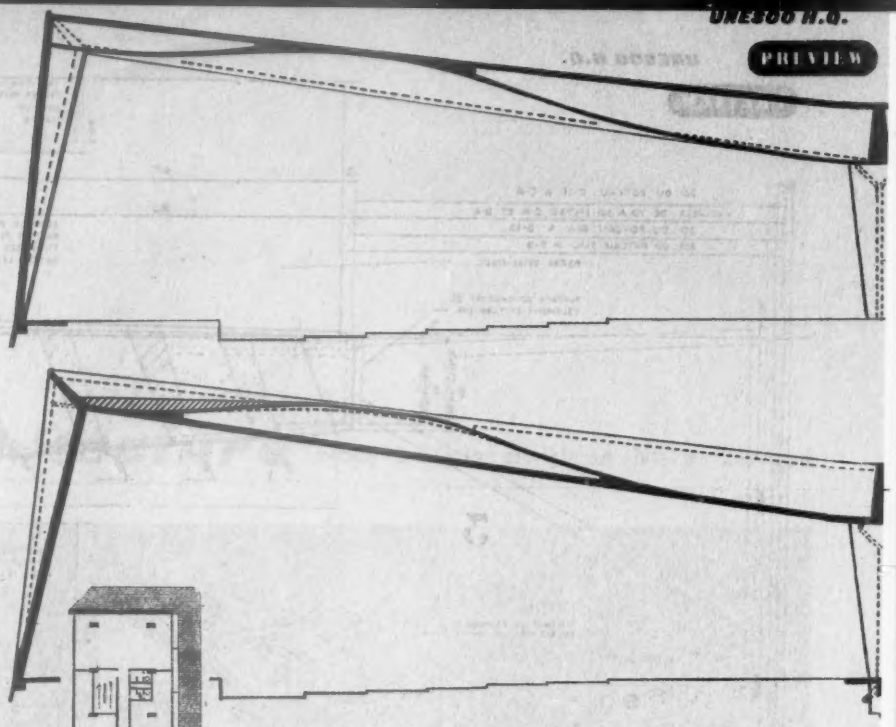


6

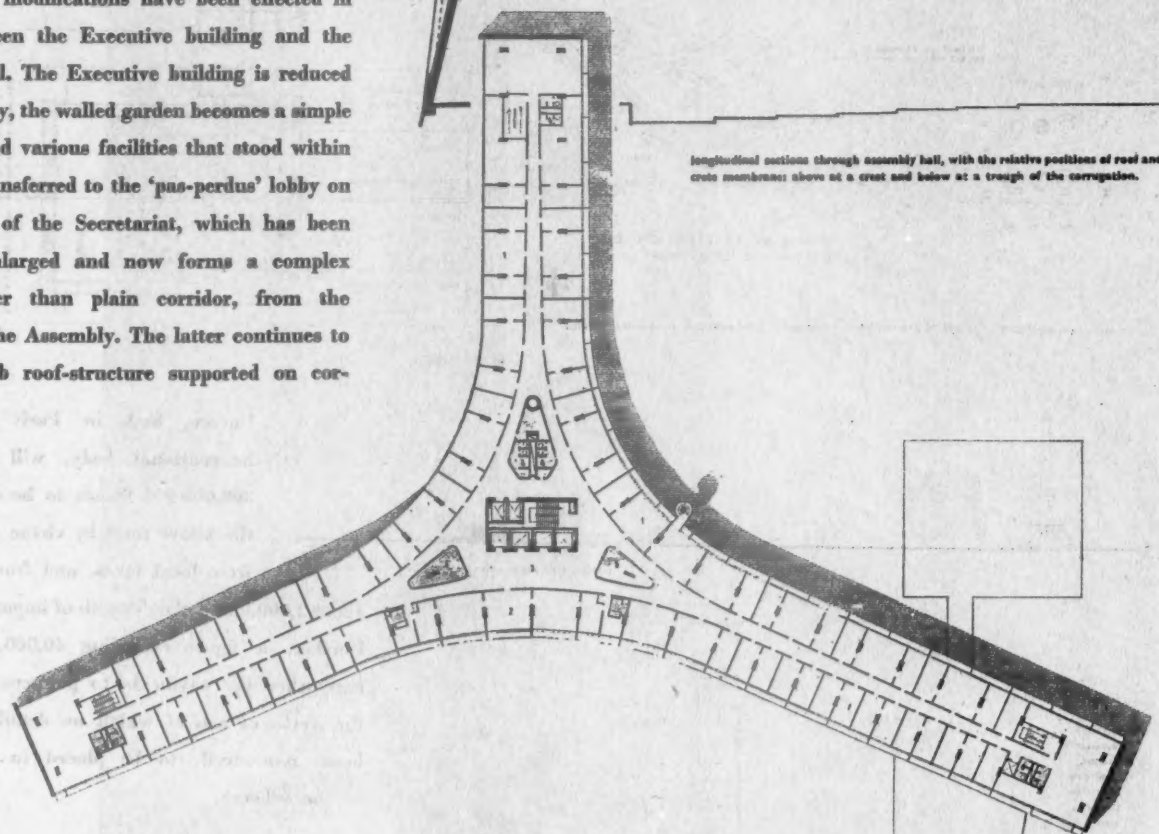
5, an aerial view from the south-east, showing the facade of the Secretariat which faces the Avenue de Saxe and the Avenue de Segur, with the single-storey Executive building in front of it. 6, Secretariat and conference building from the north-west; both roof and end walls of the latter are of continuous corrugated reinforced concrete.

facade toward the Place de Fontenoy, being a basic town-planning requirement. The ground floor continues to be given over to public facilities and circulation, the second to sixth floors to office accommodation, and the two upper floors to staff and social facilities, and to roof gardens commanding wide views over southern Paris.

Considerable modifications have been effected in the area between the Executive building and the Conference Hall. The Executive building is reduced to a single storey, the walled garden becomes a simple paved court, and various facilities that stood within it have been transferred to the 'pas-perdus' lobby on the other side of the Secretariat, which has been considerably enlarged and now forms a complex entrance, rather than plain corridor, from the Secretariat to the Assembly. The latter continues to be a folded-slab roof-structure supported on cor-

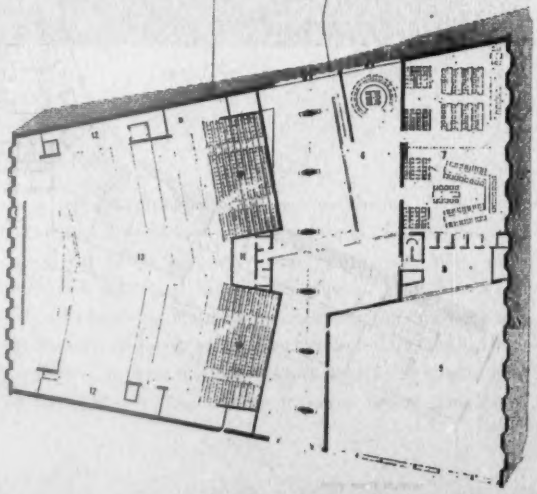


longitudinal sections through assembly hall, with the relative positions of roof and concrete membrane: above at a crest and below at a trough of the corrugation.



first floor

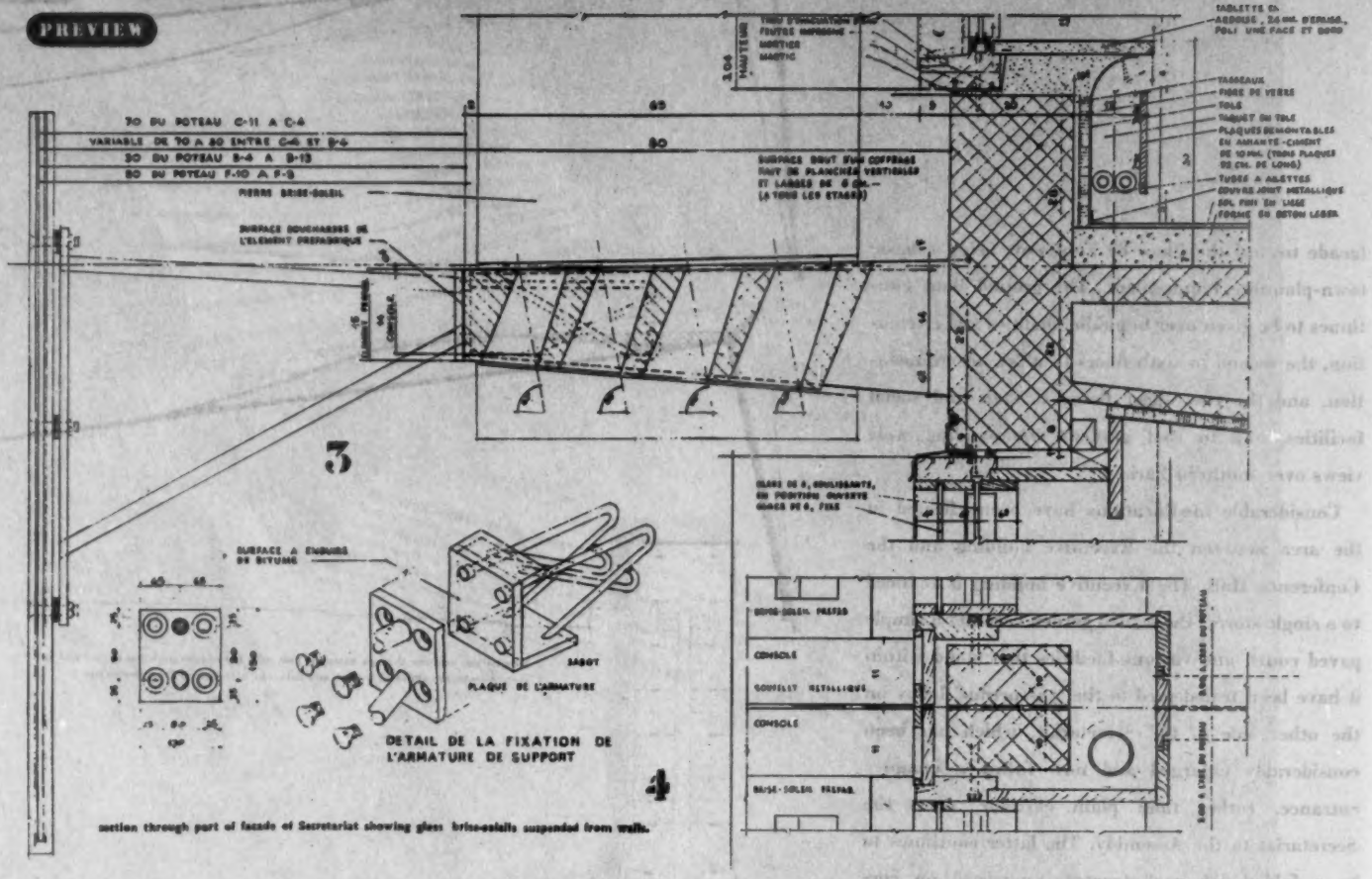
key
1, offices.
2, director-general.
3, circulation.
4, lavatories.
5, stores.
6, foyer gallery.
7, committee room.
8, interpreters' cabins.
9, upper part of conference room.
10, press and public seats.
11, film projector.
12, lighting galleries.
13, upper part of assembly hall.



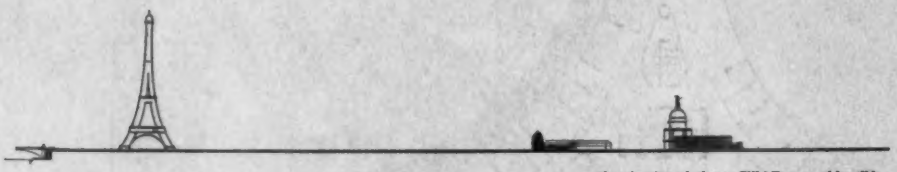
rugated walls at the ends, and on a row of columns in the centre of the building. The ceiling under this roof consists, on the side of the block where the smaller conference rooms are grouped, of a continuous concrete membrane across the bottom of the corrugations, but over the plenary assembly hall this membrane rises through the corrugations until it reaches their crests over the centre of the chamber, and then curves down again—a form which is expected to give excellent acoustic performance.

The budget for the whole scheme amounts to about 2,000,000,000 French francs, and the accounts include some unusual features. Thus the special status of

PREVIEW

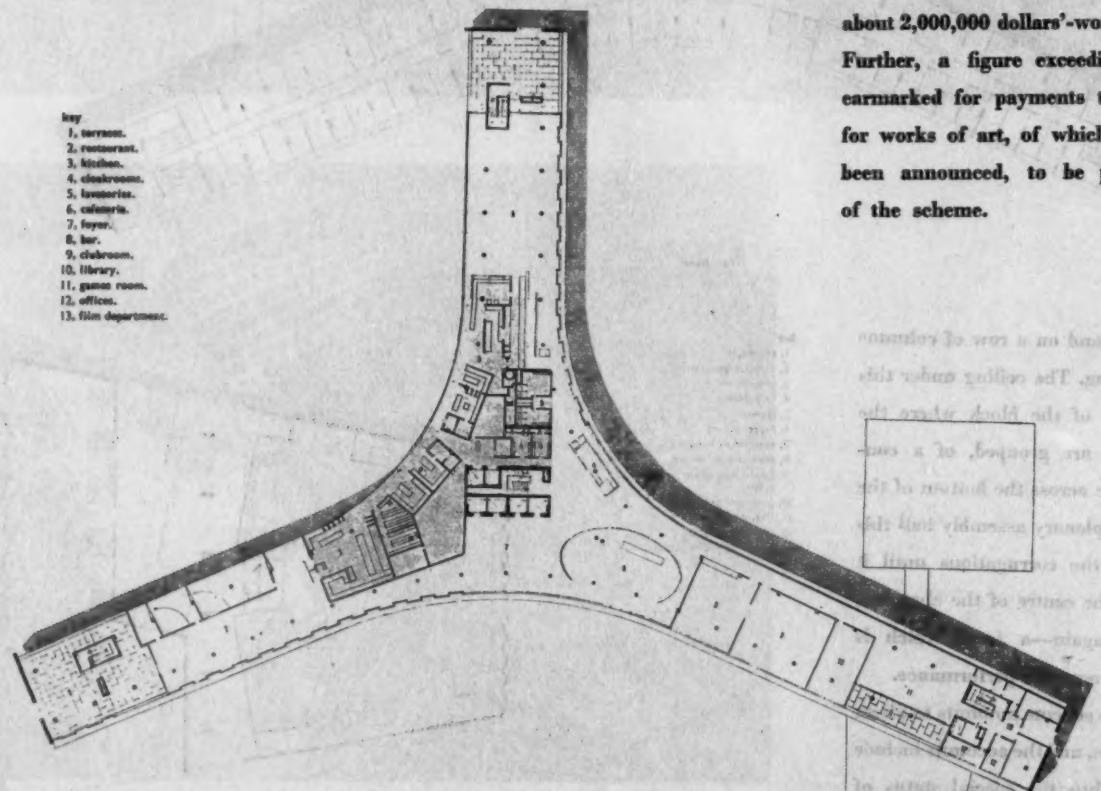


section through part of facade of Secretariat showing glass brise-soleils suspended from walls.



section showing relation to Eiffel Tower and Invalides.

Unesco, both in Paris and as an international body, will enable some 300,000,000 francs to be deducted from the above total by virtue of exemptions from local taxes, and from customs on about 2,000,000 dollars'-worth of imported materials. Further, a figure exceeding 40,000,000 francs is earmarked for payments to painters and sculptors for works of art, of which no details have so far been announced, to be placed in various parts of the scheme.



seventh floor plan

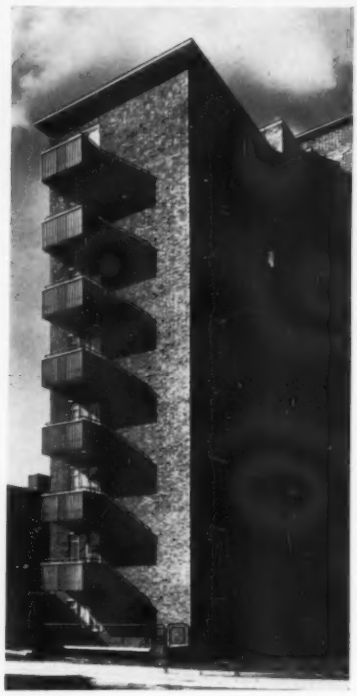
1, *one of the 7-storey blocks from the north-west.*

FLATS AT BRIXTON HILL, LONDON

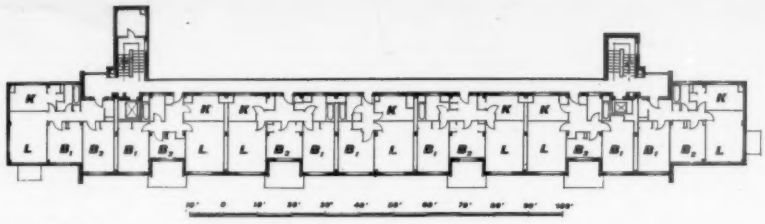
ARCHITECT, CLIFFORD CULPIN

These flats, built for the Wandsworth Borough Council, are on a 16-acre site beside the main Croydon road at Brixton Hill. The scheme replaces the estate laid out at Roupell Park by Banks and Barry in the 1850's. Some of the houses had been bomb-damaged and cleared leaving spaces on which the first blocks of flats could be built, and the redevelopment was carried out stage by stage. The strip of ground next to the main road has been left as an open space and will be planted with trees and shrubs.

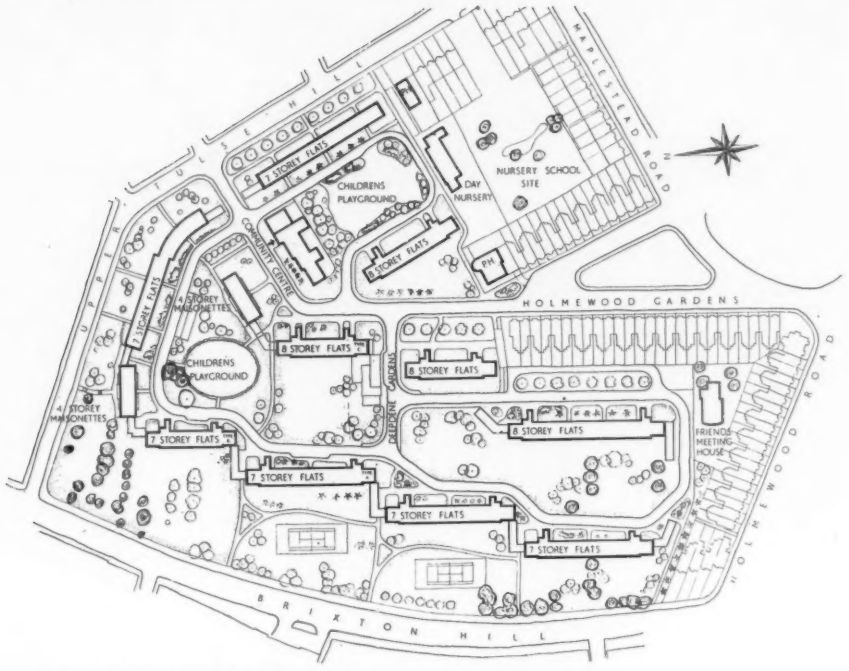
The first two blocks were four storey maisonettes, the subsequent blocks are seven and eight storey flats; most blocks run north and south, and hence all living rooms and bedrooms face west and all kitchens and bathrooms face east. The flats are all small, with one or two bedrooms, and balcony access is used, with one lift in short blocks and two in long ones: the lifts are big enough to carry prams, but stores



2, end elevation of an 8-storey block.



typical floor plan

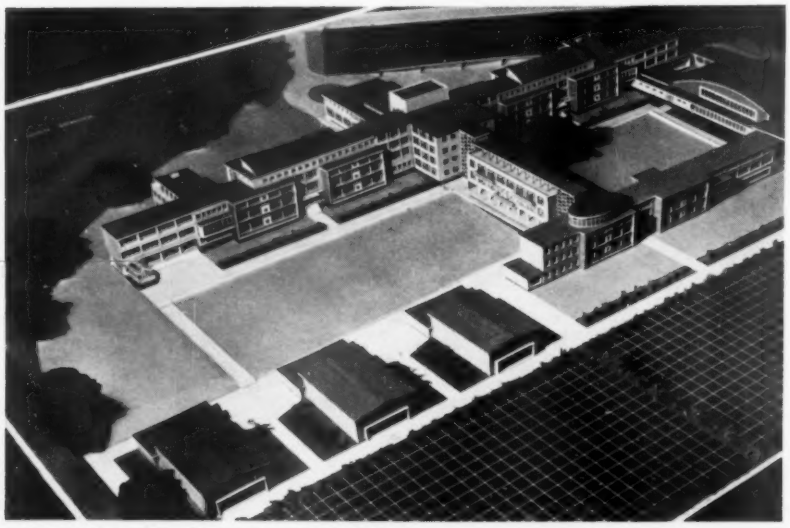


site plan of estate as it will look when completed

Flats at Brixton Hill, London

are also provided at ground level. All tall blocks have frame construction, and in the earlier blocks this was a normal reinforced concrete type with in situ hollow tile floors. The latest phase, however, has precast concrete horizontal members and rolled steel sections for the vertical members. This system can be constructed at the rate of a normal steel frame, yet keeps some of the economies of reinforced concrete construction: the only difficulties experienced were in plumbing the frames in the earlier stages due to the inevitable movement between the reinforced concrete beams and the steel columns. Once the reinforced concrete floors are cast, however, the whole frame becomes rigid.

The external walling is thin cavity construction, with brick outer skin and 4 in. hollow clay block inner skin; the end wings are in solid 9 inch brickwork lined with a waterproofed cement rendering and insulated with cork sheeting. Internal partitions are 2½ inches and 3 inch hollow clay blocks; laterally between adjoining flats there are two of these 3 inch partitions with a cavity between. The heating is entirely provided from a central boiler house, and so is domestic hot water which is drawn off through a calorifier holding thirty gallons.



3, axonometric view of a model of the school.

COMPREHENSIVE SCHOOL AT KIDBROOKE, LONDON

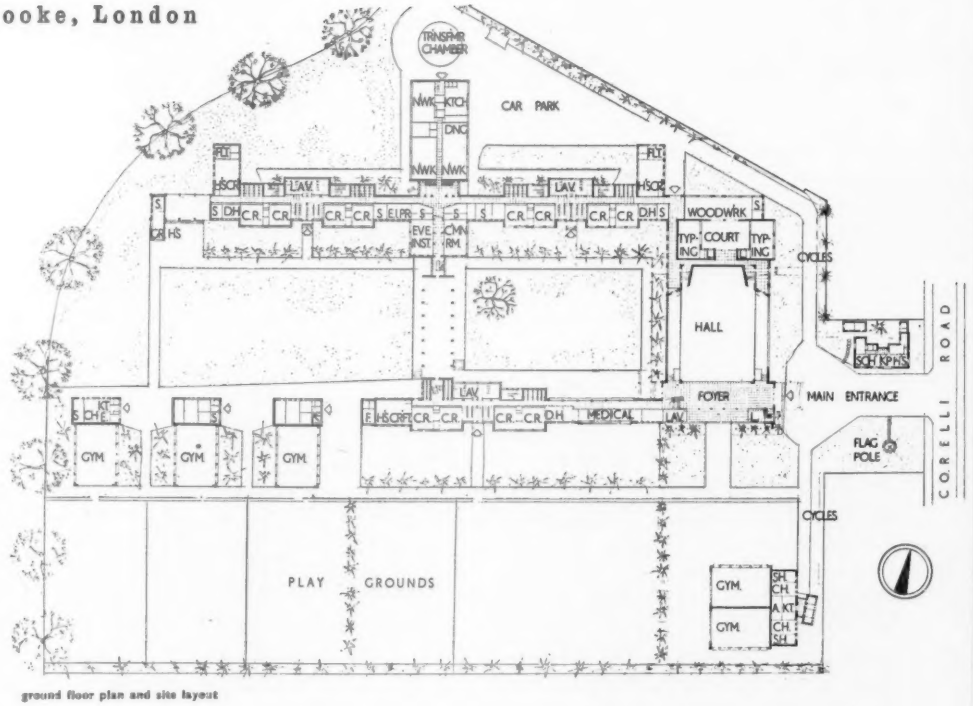
ARCHITECTS, SLATER, UREN AND PIKE

PARTNER-IN-CHARGE, CHARLES PIKE

This is the first of the LCC's Comprehensive Schools designed to serve 2,000 girls from the amalgamation of two Secondary Schools, parts of two technical colleges and a thirteen-form entry of new eleven-year-old pupils. It was intended to include the pupils of a Grammar School within this framework also, a proposal which was vetoed by the Minister of Education after an enquiry. The present intake will be 1,700 girls, divided into eight houses. The site covers 10 acres on the west side of Corelli Road, just west of Shooters Hill; playing fields further west—with eight hockey pitches and eight hard tennis courts—occupy another sixteen acres.

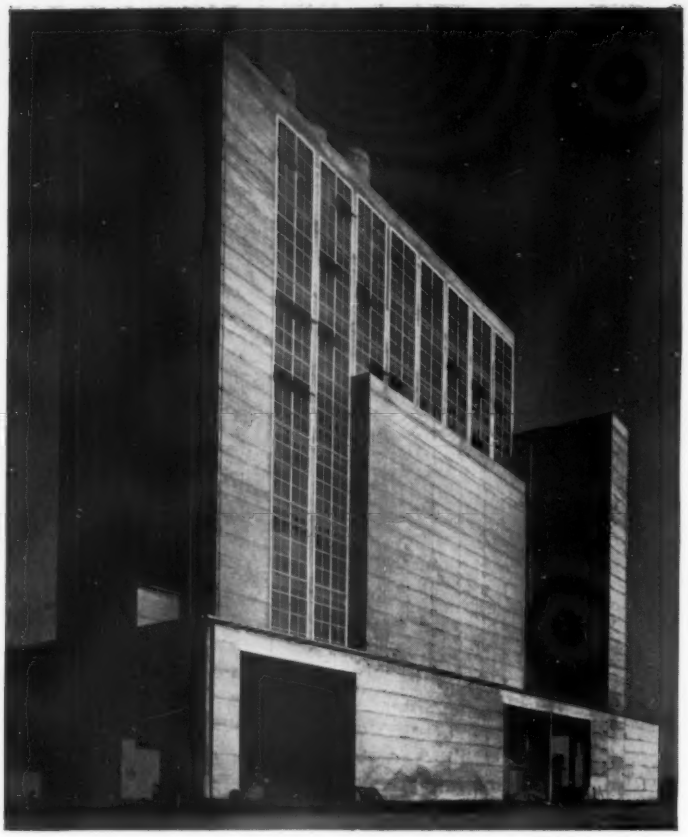
4, assembly room looking to stage and east side gallery, with what is said to be 'the longest venetian blind in the world' on the right.

Comprehensive School at Kidbrooke, London



ground floor plan and site layout

Most of the teaching rooms are in one long and one short four-storey block running east-west, joined north-south by the assembly hall and a fourth block containing staff rooms and library. The kitchen and dining rooms are contained on three floors at the intersection of the long block and the north-south block. The school generally has a reinforced concrete frame cladded with yellow-brown Leicestershire bricks and Canadian shingles which will weather silver-grey. The classroom walls are of reinforced concrete slab, beam and column construction, with a shell roof over the kitchen and north light shells over the craftrooms. The chief interest, structurally, is in the main assembly hall, which has a 3 inch thick concrete dome on a rectangular plan. The upper part of the four sides of the hall consists of 8 inch thick walls monolithic with the dome and this box-like structure is ultimately supported by one column at each corner. These walls, at a lower level, contain large window openings and on either side of the hall they carry at their lower edge a flat roof over a side gallery, which extends the hall space to a larger area. Post-tensioning by the Freyssinet system was used in the boundary walls to deal with their combined action of beams carrying the vertical loads and ties resisting the spreading forces from the dome. The dome is almost entirely in a membrane condition, that is, free from bending, and this is largely being brought about by the prestressing in the boundary members. The small oval concrete mullions in the windows through the side walls act as hangers carrying the low flat side roof slabs. Rainwater is conducted to the outlets at the corners by slots sunk near the edges from the otherwise uninterrupted surface instead of by small parapet upstands. Structural continuity of the dome and boundary walls is obtained by interior haunching large enough to incorporate the slots. The main hall roof is finished with copper and internally there is a hung ceiling of fibrous plaster panels. The shell concrete roofs of the kitchen and art rooms and ceilings in foyer and housecraft rooms have a sprayed plastic finish to reduce noise and condensation.



5, the silo from the north-west.

GRAIN SILO AT HAUGHLEY JUNCTION, SUFFOLK

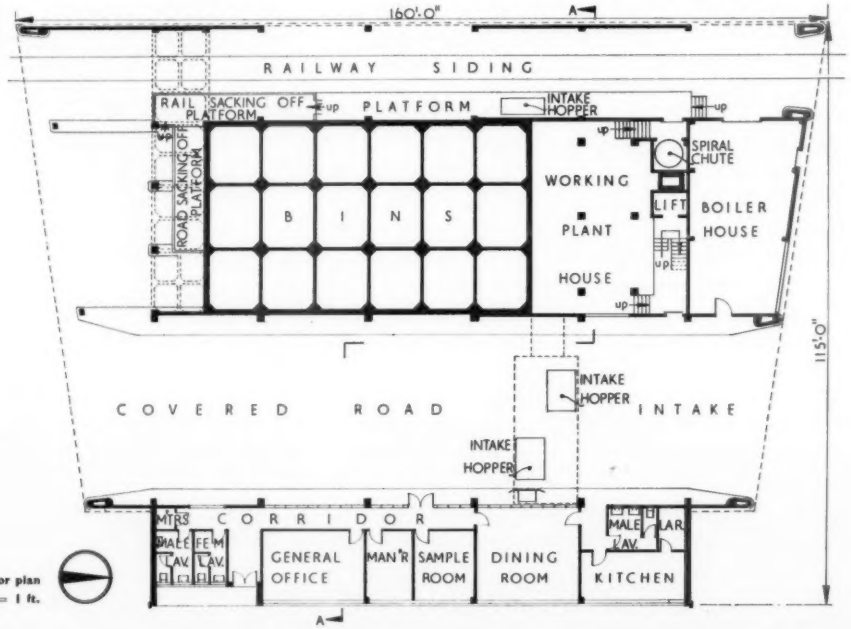
ARCHITECTS: MINISTRY OF WORKS

SENIOR ARCHITECT: A. SWIFT. ENGINEER: G. C. KIM

This silo has been built by the side of the main London to Norwich railway, about four miles north of Stowmarket. It was erected for the Ministry of Food to meet the rapid change-over to combine harvesters, and takes grain direct from the harvest fields, drying it mechanically in twenty-four hours and removing the need for stacking.

Grain arrives by both road and rail, so that access arrangements have to be duplicated, and five-ton intake hoppers are provided both at the railway siding and set flush into the covered roadway. From these the grain passes over a continuous weigher into the pneumatic system, which stores the grain in bins until it can be dried. This is effected by taking it on conveyors and elevators to the top floor of the working plant house and feeding it into vertical drier columns, where the dust is extracted and the grain dried and then cooled, to be stored in bins again at the bottom. The intake capacity of the silo is thirty tons per hour, and drying takes place at ten tons per hour, so that the amounts strike a general balance: intake taking place only during working hours, and drying being a twenty-four hour process. Grain is then loaded into sacks and taken from the road or rail sacking-off platforms.

The construction is entirely of reinforced concrete with the monolithic central structure carried on a reinforced concrete raft. The covered ways are spanned by free-standing reinforced concrete portal frames. Steam for the drying plant is provided by a horizontal boiler fitted with hand-fired forced draught furnaces, and an automatic thermal feed system, in order that returning hot condensate can be fed directly into the boiler. A separate sectional boiler for the heating and hot water requirements of the office block is provided, since the main steam boiler operates intermittently during different seasons. All water requirements are obtained from a 6 inch bore hole, in which is fitted a plant for removing iron from the water.



ground floor plan
scale: 1/32 in. = 1 ft.

BOOKS

NEO-CLASSICAL

BOULLÉE'S TREATISE ON ARCHITECTURE. *Edited with introduction by Helen Rosenau. London: Tiranti* 21*s.*

Neo-classicism seems to have a certain appeal at the moment and there is good reason for this. The 'modern movement' has been declared dead by most critics and will, I surmise, shortly be found to have died (*i.e.* stopped moving—the appropriate end of every movement) at some time in the nineteen-thirties, if not earlier. It becomes imperative therefore, for our peace of mind, to hang the departed movement in its appropriate historical cage, and what other cage can we hang it in but the neo-classical, where a bizarre concatenation of stuffed monkeys already extends back through two centuries? Our own particular and beloved monkey can join tails with the tribe whose forebears started the 'modern' business just about the middle of the eighteenth century, and one of whose early leaders was Etienne-Louis Boullée. The late Emil Kaufmann adumbrated a result of this kind as long ago as 1929, amplifying his findings in *Von Ledoux bis Le Corbusier* (1933); his latest work—*Three Revolutionary Architects* (1952)—is a careful and deeply interesting study of Boullée, Ledoux and Lequeu. Of these three romantic megalomaniacs, Ledoux is unquestionably the greatest, but Boullée's career is essential to an understanding of the neo-classical outlook; indeed, his treatise, which Mrs. Rosenau has now edited and introduced, provides a valuable key to the whole historic pattern of 'the modern.'

Boullée based his new philosophy of architecture on a flat contradiction of Vitruvius. Architecture, he says, is *not* the art of building. The art of building is secondary. Architecture is an affair of the conception of expressive images analogous to function, nor identifiable with it. Architecture cannot, however, be the affair of 'pure invention' which Perrault, in the classic controversy with Blondel claimed it to be; it must base itself on the study of solid bodies, symmetry and proportion. In taking up this position Boullée was reversing the earlier neo-classic purism of the Abbé Laugier. Laugier had insisted that all architecture should be as direct and functional in expression as the very simplest type of classical temple. The result would necessarily be to produce buildings of a rigorously geometrical character, and this tendency, indeed, already existed in French architecture, reacting against the Rococo. Boullée seized upon the geometrical result and conceived it as the cause rather than the effect. He fell romantically in love with sheer mass and this led him, inevitably perhaps, to the megalomania which afflicted not only him but his younger contemporary, Ledoux, and which remained an attribute of Prix de Rome designs till far into the nineteenth century.

Miss Rosenau deprecates the labelling of Boullée as a 'romantic' and prefers to see in his passion for geometry a new outcrop of the Platonic tradition. Yet surely his doctrine of 'character,' his insistence on the 'tableau expressif,' the 'poésie enchanteresse' are the very essence of the romantic approach. Mr. Kaufmann tries to resolve the question by showing that Boullée 'aimed at discrepant objectives'—geometry and the picturesque—and 'lived' in the illusion that he was able to . . . reconcile the irreconcilable.'

Both Miss Rosenau and Mr. Kaufmann have rendered a service to architectural history, and their books are among the very few to which students of international neo-classicism can resort. Mr. Kaufmann's book, in particular, will be invaluable, for in addition to dealing pretty thoroughly with his three main characters, he gives short accounts of some of their precursors—Jacques François Blondel, Germain Boffrand, Laugier and Le Geay. Where his book is somewhat disappointing is in a failure to assess the neo-classical revolution (his word) as a whole, particularly in regard to the changing loyalty to the antique in a world where archaeology, like so many other things, was beginning to be 'modern.'

John Summerson

LANDSCAPE TODAY

MODERN GARDENS. *By Peter Shepheard. The Architectural Press.* 36*s.*

This is primarily a picture book international in its scope. It is a selection from such recent designing as seems to Mr. Shepheard as 'not only belonging to, but being inspired by, the age in which we live.' His selection is fair enough; except that, perhaps unavoidably, there is no work of those German designers who gave the lead to the Scandinavians and the Swiss who, in turn, are providing a stimulus to such little lively contemporary work as is to be seen in this country. One cannot complain that the book provides only what it sets out to do; but there is much in it of the purely decorative (and often merely pretty) detail, which in this country is not that which most needs handling well. We suffer not merely from gardens ill designed, but from too much gardening and too little landscaping.

To this collection of photographs Mr. Shepheard contributes an admirable introduction, always clearly and sometimes movingly written, not by way of analysis of what follows but as a partial exposition of his own views on the nature of landscape design; an art which he sees clearly akin to that of architecture but sharply separated by the character of its techniques and medium, and mastery of which, as he rightly shows, needs long years of training, observation and experience and, above all, a feeling, part painter's, part poet's, for Nature. There is no inherent difficulty in planting design; but it is not a skill which can be quickly acquired, and certainly cannot be merely from the reading of a few text books and a study of photographs of the kind this book contains.

The value of the landscape designer's work has as yet won little recognition in this country. In Scandinavia and Brazil, as the photographs show, this is not so. For architects perhaps the chief lesson of this book, quite clear from a reading of Mr. Shepheard's introduction and just as definite, though less apparent, from a study of the photographs, is this. Unless an architect has himself a mastery of the medium (and, apart from the charlatans, there are few who would make such a claim) he needs not technical advice from a horticultural expert, but the co-operation of a designer who can share his particular outlook, can interpret and perhaps, from a deeper experience, can enlarge and stimulate his ideas. The admirers of the Brazilian achievements might ponder on this aspect of Burle Marx's significance.

To stress this is not mere professional propaganda. Much landscaping of all kinds is being carried out in this country; most, by far, the work of the parks superintendent and borough engineer; much by the nurseryman contractor; some by the gardening expert; with results that the architect so justly scorns, but which the public so often delight in. Architects, both individually and as a profession, more than anyone else have the influence and opportunities to secure an improvement; but only if they realize that landscaping is not just a sideline of architecture.

Peter Youngman

PORTAL SCULPTURE

THE WEST PORTALS OF SAINT-DENIS AND CHARTRES. SCULPTURE IN THE ILE-DE-FRANCE FROM 1140 TO 1190. THEORY OF ORIGINS. *By Whitney S. Stoddard. Cambridge, Mass., Harvard University Press,* 1952.

This magnificently produced book is disappointing in its contents. In spite of a thorough analysis of the motifs of ornament at Saint-Denis and Chartres, unfortunately relegated to the Appendices, it does not give the impression of a serious piece of scholarship. Mr. Stoddard seems to be at cross-purposes with himself. At no time do we know what his aim is. Does he want to discuss only ornament, as he claims in several places? Then why devote more than half the text and plates to statuary proper? Does he really want to solve, or at least survey completely, the problems connected with the two workshops of Saint-Denis and Chartres? Then why include Provins, Bourges, Saint-Loup-de-Naud and still more Senlis? On the other hand, the

landscape of mid-twelfth century Ile-de-France art is far from complete if one fails to study the Coulombs columns and the Carrières-Saint-Denis retable.

Although he has taken some methodological precautions in his introduction, the author does not keep to them in the course of the discussion. When he comes to the dating of the Chapter-House doorway from the Cathedral of Toulouse, he uses the most dangerous line of reasoning, as though one could take argument from the evolution of ornament in one district for the dating of works in another. Furthermore, the similarities he discovers between Saint-Loup-de-Naud and Saint-Etienne at Toulouse are far from convincing. Equally unconvincing is the so-called Burgundian character of the Parthenay Kings: Moissac is the evident analogy. A strong pro-Cluniac prejudice pervades the whole book, but the ornamental similarities between Paray-le-Monial and the Ile-de-France workshops may eventually boil down to a similar transference of painted motifs into stone. Lombard and Mosan art are dismissed without serious discussion, when the motifs ought at least to have been listed in another appendix; and if Mr. Stoddard had studied more carefully the problems of North Italian sculpture, especially the chronology of Niccolo's works, he would certainly have revised his dating of the Toulouse Apostles. In the same manner the origins of the acanthus style of Saint-Denis remain unexplained. Vézelay and Saulieu belong to an entirely different tradition, and in view of the presence at Saint-Denis of a Carolingian nave, it might have been more rewarding to look for analogies in the direction of early medieval prototypes. The various series of Corinthianesque capitals are parallel, rather than derivative. In every field the investigation appears prejudiced and rather superficial, when only the most critical and extensive survey can hope to bring some light into the tremendous problems of Saint-Denis.

Jean Bony

ARCHITECTS' WORKING DETAILS, 2. *Edited by D. A. C. A. Boyne. Architectural Press.* 21*s*.

To some extent the working detail is the legacy of the epoch when measured drawings were popular, for the desire behind both is to capture an exact record of how a certain architectural effect was achieved. But there is this difference: that whereas before, the aesthetic effect was the thing to be captured, today what matters most is the assembly of technical facts. Nevertheless the old idea still lives on in the choice of subject matter, for no one who is architect-minded is going to choose for privileged illustration a detail which is ungrateful to the eye.

The new type of working detail, in incorporating (as most do) factory made components, has an additional function to perform, namely to describe exactly how these components are fixed into their context. This is an aspect to which the architect designer has normally given only a very cursory attention, and that not at the time when the drawings were being made. It is, for instance, quite evident in looking through the present collection that the compiler had to go for most of this kind of information not to the architect's but to the shop drawings. 'Architects' Working Details No. 2' therefore has an extra service to give the busy practising man: to tell him namely what Messrs. So-and-So's contrivance really looks like when conscientiously drawn out, what size of nuts it needs to secure it, and how the dickens they put it up. Not all examples given show these facts in all their fullness, but many do; and here in any case is a mine of detailed technical information which is not to be got from any other source. **L.W.**

Books Received

LASAR SEGALL. Lino Bardi. Museu de Arte de S. Paulo.
MICHELANGELO: PAINTINGS AND ARCHITECTURE. L. Goldscheider. Phaidon Press. 2 gns.
SPON'S ARCHITECTS AND BUILDERS PRICE BOOK. Spon. 25*s*.
CHART OF THE HISTORY OF ENGLISH FURNITURE AND DOMESTIC ARCHITECTURE. T. H. Bickel. Ernest Benn Ltd. 5*s*.
A SHORT DICTIONARY OF ARCHITECTURE. Dora Ware and Betty Beatty. George Allen and Unwin. 12*s*. 6*d*.
LOW COST HOUSING IN GERMANY. Hermann Wandersleb. Otto Maier Verlag.

LANDSCAPE

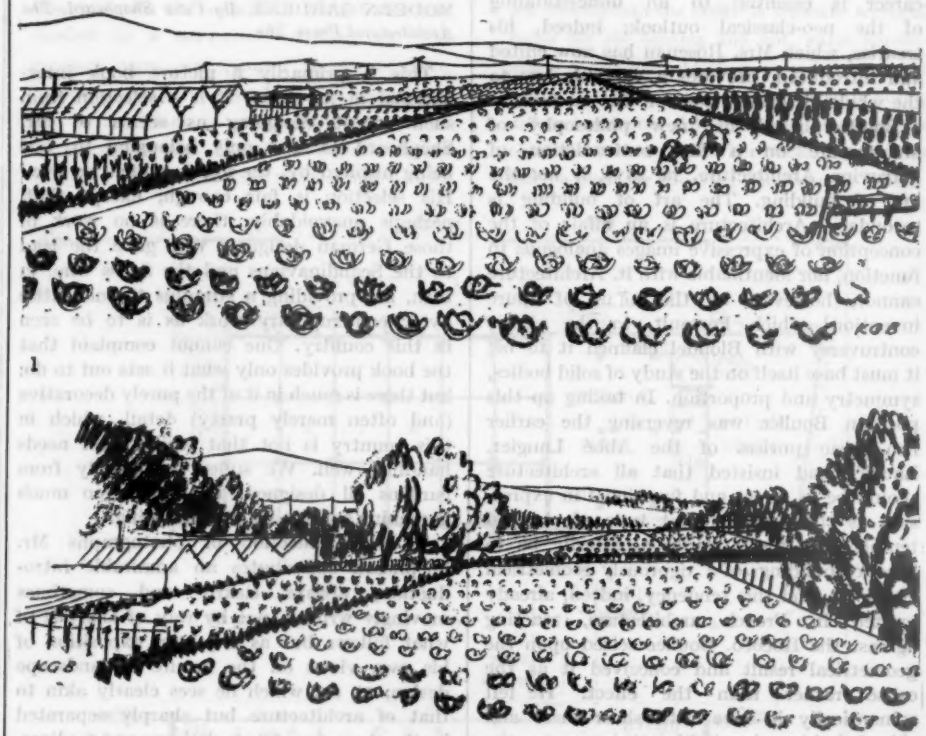
THE PATTERN OF AGRICULTURE

Since cultivated landscape forms the bulk of our countryside its appearance is even more important to us than the preservation of isolated beauty spots. The background of the closely settled English landscape is formed by the pattern of crops. As the need for production and full use of the land grows, crops, of one kind or another, cover an increasing proportion of the landscape, leaving only small enclaves where nature remains comparatively undisturbed; a state of affairs which has already been reached in Holland and Denmark.

Every type of sound husbandry has a potential landscape value. But, as in all other manifestations of man's activity, the finest results only come when there is thought for appearance as well as for function. Where there is care neither for appearance nor for the long-term welfare of the land neglected pastures and broken hedges patched with old iron can look as shabby as an urban slum 3. Bleak farmlands from which all wind shelter in the form of trees and hedgerow have been removed, have already a look of the desert to which erosion may subsequently reduce them.

On the other hand, well-farmed fields, sheltered by hedges or windbreaks can make in themselves a pleasant enough scene, each crop developing its own distinctive pattern; the pattern of corn 4, the pattern of hops 5, the pattern of market gardens 1. But the really satisfying landscapes are only found when something is added to the pure efficiency of production 2. It was this care, not only for agriculture, but also for the scenery, which inspired the eighteenth century landowners and which has given us the finest of our traditional rural landscape 6. To-day the same tradition may be seen in the use of well-designed gates and farm buildings, or in the occasional groups or single trees, kept because they are part of the view even if they are not strictly necessary to the farm economy. It is these which form the accents of the landscape composition, as the groups of cypress form the essential focal point to the vineyards of Tuscany 7.

Sylvia Crowe

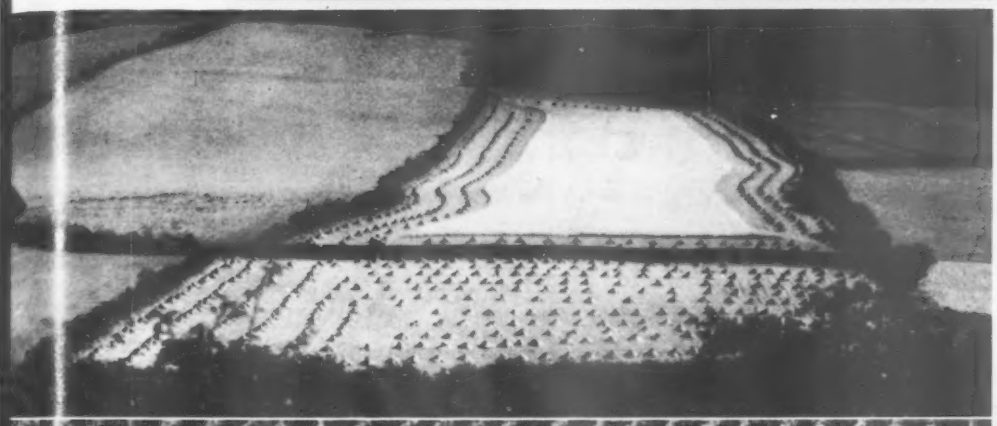


1

2

landscape: the pattern of agriculture

3



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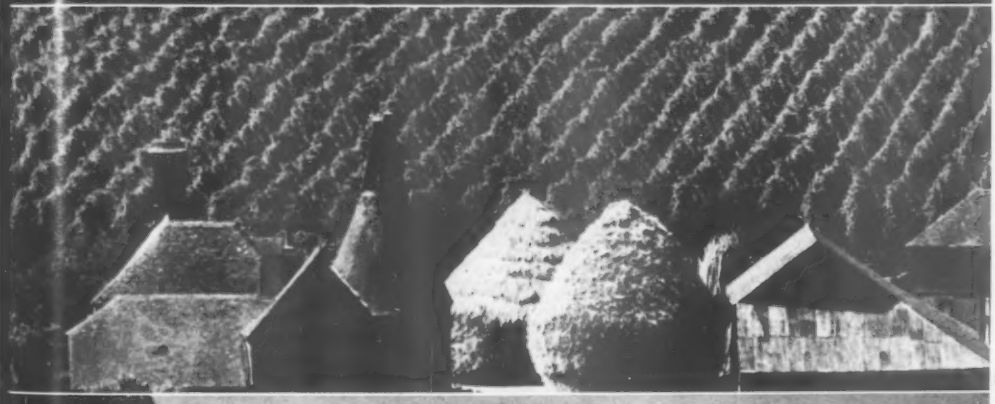


5

6

7

3, neglected pasture land. 4, the pattern of corn and 5, that of hops. 6, typical eighteenth century parkland. 7, Tuscan vineyards.

TOWNSCAPE

LAMP-POSTS

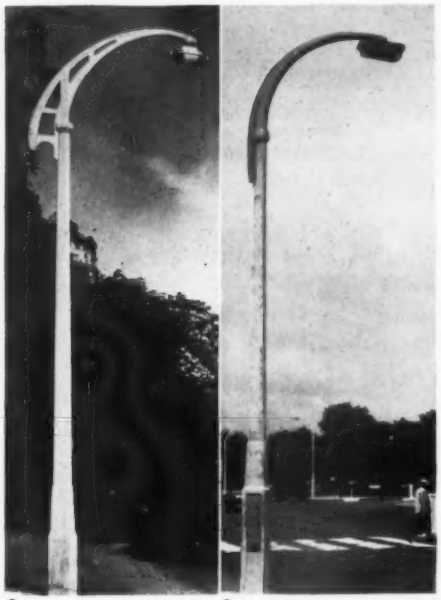
A "list of approved designs for street lighting columns" recently issued by the Council of Industrial Design, shows what useful work has been done in this field since the Council entered it about five years ago. Ugly lamp-posts are one of the biggest menaces that threaten British towns and villages. A large part of the menace derives from bad siting and unsuitable scale and materials, difficult matters to cope with because each case has to be treated on its merits. The Royal Fine Art Commission is making a start in dealing with this aspect of the problem, while the COID has been concentrating on the equally vital matter of the design of the posts themselves. Their discussions with manufacturers have resulted in a marked improvement.

The approved designs (which the Ministry of Transport is helping to persuade local authorities to employ) are of a far higher standard than those approved some years back by the Royal Fine Art Commission, and when manufacturers have been given reasonable time to withdraw the latter from production, the Ministry will make the COID approved list compulsory in roads under its direct control.

The four concrete lamp-posts shown below illustrate the improvement the COID'S efforts have induced in the designs of one manufacturer: Concrete Utilities, Ltd. 1, a thoroughly misguided exercise in concrete moulding; 2, a less bizarre

1

example of bad design, but still unbearably fussy, clumsy and ill-proportioned; 3, a simplified version that is still being installed in large numbers especially in South London, where it is replacing less



2 3

obtrusive lamp-posts of earlier vintage. The fact that it is simpler than the other two is all that can be said of it. With its crude bracket, insensitive detail and unsatisfactory proportions it remains a menace to good townscaping; 4, one of the same manufacturer's new range of greatly improved designs: slim and unobtrusive in its silhouette and incorporating a concrete canopy for the lantern, which gives the latter a satisfactory continuity with the bracket arm. J.M.R.

4

EXHIBITIONS

PAINTING AND SCULPTURE

Specialists in the truculently drab have good reason to be enthusiastic about John Bratby's first one-man show at the Beaux Arts: the best of his paintings bring to the kitchen table a back-handed amplitude which leaves an indelible impression of a family living entirely on cereals, salt and beef-extract, and surrounded by gadgets for dealing with food which is never available.

'Still Life with Chip Fryer,' 1, is typical, except that the chair at the far side of the table is often occupied by a red-faced girl

1

in a brassiere, who stares out at us with a look of sullen hatred. Her presence turns these pictures into diffuse paraphrases of Chirico's early paintings of biscuits guarded by a glaring eye. The obsessive atmosphere which one finds in Jack Smith's endlessly repeated paintings of a bare kitchen is intensified in Bratby's work, and his disconcerting images of plenty suggest that he is a voluptuary of straightened circumstances. His turgid expressionism—an art school version of Munch—adds the final touch of frowsiness, prepares all the objects for the rubbish tip. Few young painters have been as strikingly exorbitant in recent years.

Roderic Barrett, who was holding his first one-man show at the same time, in the same Gallery, had the unfortunate experience of being ignored by some of the critics who were enthusiastic about Bratby, but it was partly his own fault. He is a belated adherent of the flat-pattern, cubo-expressionist system which was practised here by Adler and his half-forgotten satellites, and one has to be a magician with colour to make such a system work, for the eye very quickly tires of arbitrary colour patches inserted into a linear framework. Probably Barrett shouldn't be painting easel pictures at all, but developing his gift of comic observation. His children lead experimental lives. They are the solemn counterparts of Giles's gleeful imps, and even when they take their meals under the table or stare through the backs of chairs balanced on their heads, they are in deadly earnest. They do not deserve to be trapped in Barrett's conventional picture-making.

At the Marlborough Fine Arts, a group of Picasso's ceramics look heavily exuberant and belligerently unrefined against a background of his drawings and lithographs. The lithographs of his small daughter holding a doll are among his loveliest achievements in this medium, and with no more evidence than his study of a dove in flight it would not be rash to call his draughtsmanship the equal of Leonardo's. But without ever being extinguished, his creativeness can drop to levels where it seems a blind and mindless force. Some of his ugly, tumescent pots

2

are brutally haptic, 2, and if it were not for the paintings on them, might be the work of primitive men, moulding bulbous petitions for fruitful wives.

Something of the same crude vitality informs a good many of the carvings at the Berkeley Galleries, in the exhibition of

'Europeans seen through Native eyes.' This is especially true of the work of the Yoruba tribe of Nigeria. The tribesman who made the carving of a man on a bicycle, 3, for instance, has brilliantly

3

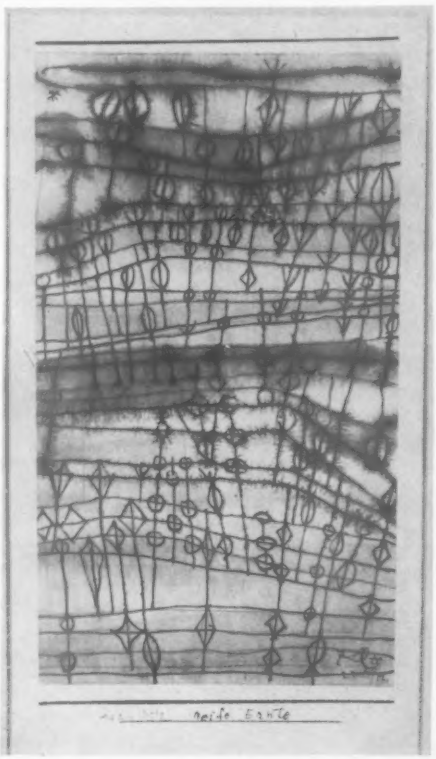
formalized the bicycle without producing a work of much value. The effigies of Queen Victoria from the same tribe are really no more sensitive than the statues erected to her memory in our provincial cities, yet they so successfully capture the pyramidal essence of the Great White Queen that her identity couldn't have been obscured even if the faces had been given blubber lips and tribal markings. The head of one of these effigies is surmounted by a kneeling negress with long, tapering breasts, holding up a box, and this treatment immeasurably increases the sense of an august presence. One cannot help feeling that the white man's Africa would be a more interesting place if native carvers had executed its monuments and perpetuated its shibboleths.

The Hanover Gallery has been showing a group of Klee's drawings and watercolours, with sculpture by the Spanish-born Parisian artist, Apelles Fenosa. Fenosa's very small figurines, and his tiny portrait bronzes of French poets, no bigger than the shrunken heads in the Musée d'Homme, are elegant and alert, and he is so innately a maker of statuettes that his large works are either accretions of small forms, or they are over-dramatized to put twists and turns into empty tracts of bronze. The medium-sized Fountain, 4, has a certain flaccid charm of its own, because the sculptor has gone to endearing lengths to turn his weaknesses into an elaborate conceit. The three spineless maidens are cornucopean personages and look as if they have been wrung out to yield their symbols of animal, vegetable and mineral. Apart from the lively little

4

bunch of jungle creatures which comes raging out of one of the bell-mouthed skirts, the forms have no tension whatsoever, but I do not think that anyone with a taste for the 'folly' can regard this work without a measure of affection.

The watercolours and drawings by Klee are mostly from the periods preceding



5

the tragic disability that compelled him to forsake his spidery line. No artist has ever exploited the pen more sensitively, or has had a greater gift of fantasy, and in the little collection at the Hanover Gallery, of which his picture of corn busily ripening, 5, is a lovely specimen, his unforced inventiveness provokes nothing but delight and wonderment.

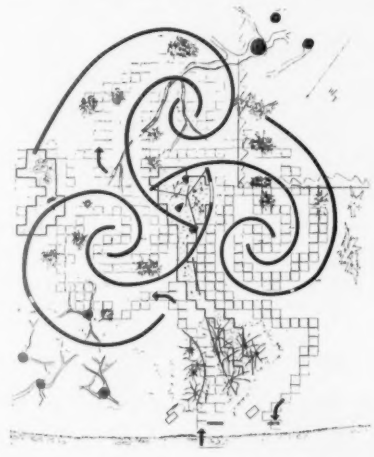
Robert Melville

WORLD

LABYRINTH AT MILAN

This year's Milan Triennale provided an object lesson in collaboration between artist, sculptor and architect: the object was the labyrinth shown here. Until it was built this kind of collaboration was a wish, expressed with monotonous frequency at international congresses, that had fathered only still-born thoughts. It was stipulated in the programme for the Triennale that a children's playground should be provided in the park which surrounds the Palazzo dell'Arte and BBPR (Belgiojoso, Peressutti and Rogers) were the architects chosen to design it. In the event, what they provided was a playground for adults as well as children. In their own words the intention was 'to put the visitor, however young, into touch with aspects of art by disguising the lesson as a game in which participation is immediate and exciting.'

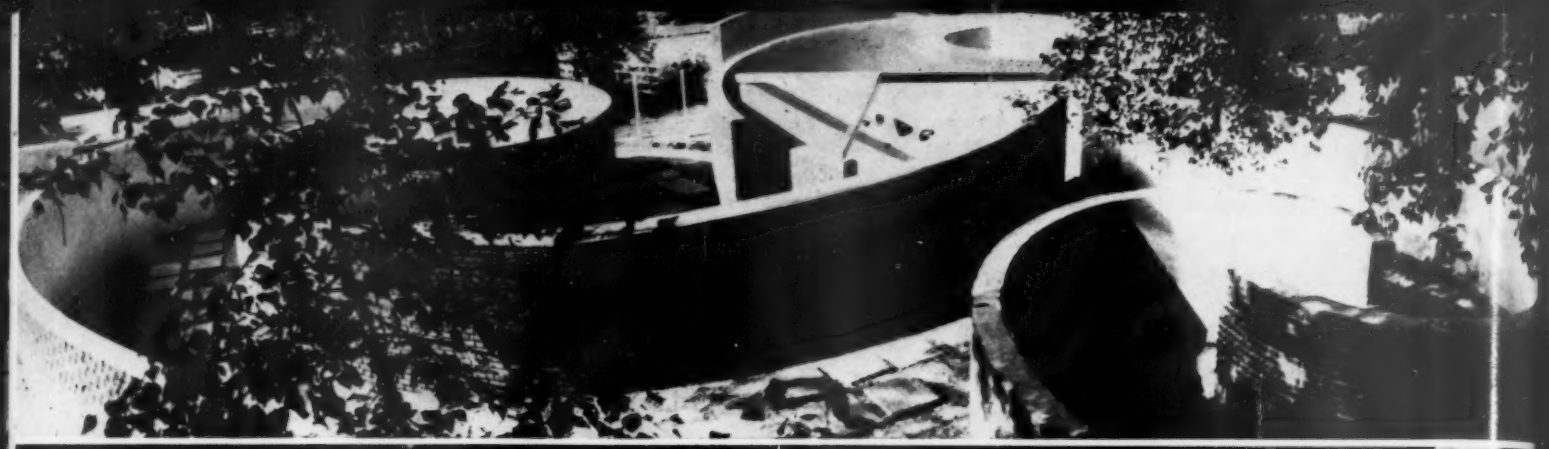
As the plan, 1, shows, the walls formed a

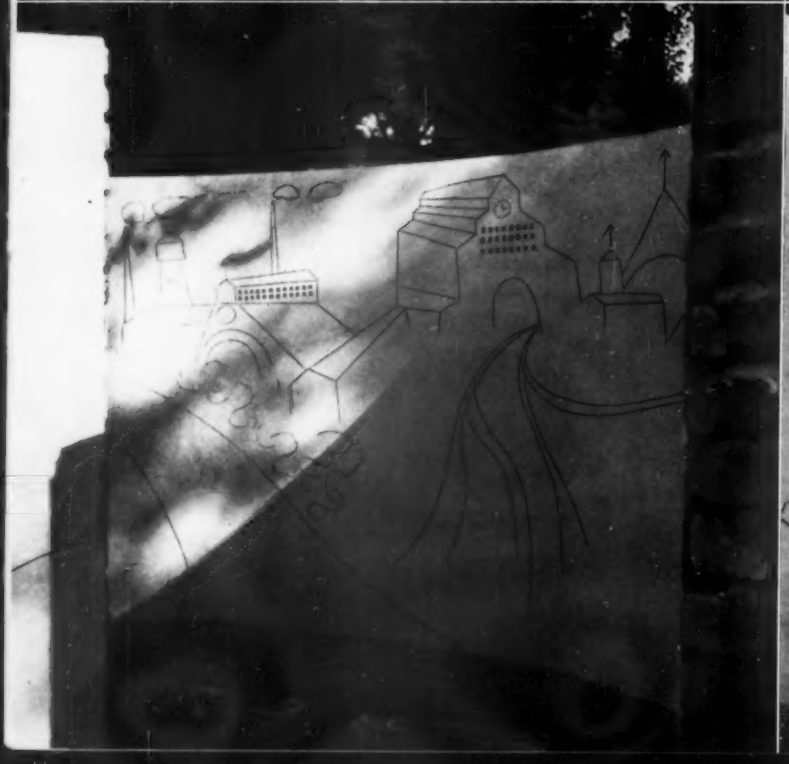


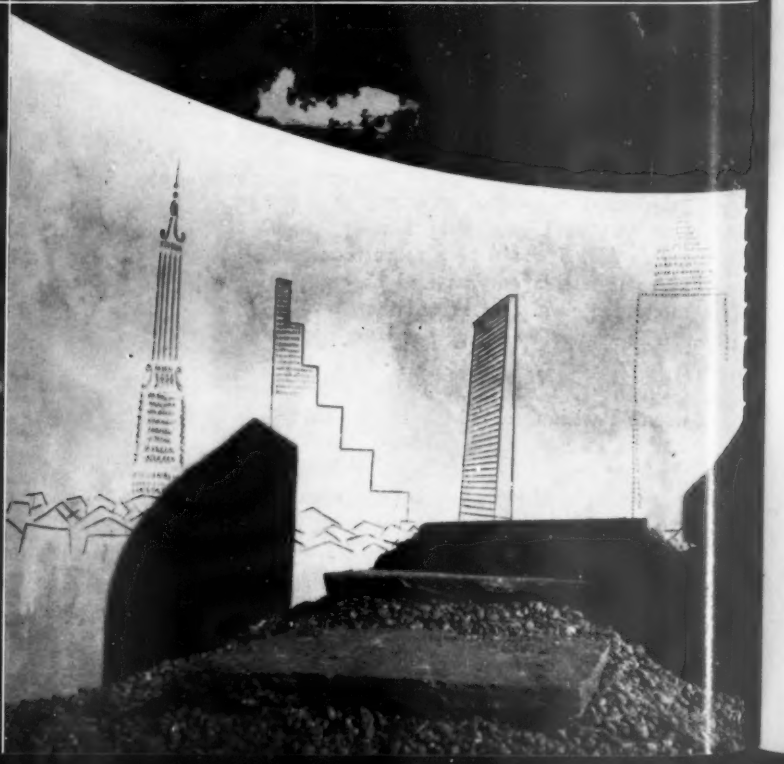
1

number of interlocking spirals and along them there unrolled in sgraffito* by Steinberg, 'a vast diorama which in effect was an academy for the eye.' As you moved up

* The technique was traditional: a layer of black plaster was first applied to the wall surface; another layer of ground-marble plaster was then laid on top of it; while still wet a sharp instrument was used to incise the design which appeared in the black of the undercoat.







world: labyrinth at milan *On the facing page, 2 is an aerial view showing the Calder mobile at the centre of the layout; 3, 4, 5 and 6 are Steinberg sgraffiti incised through marble plaster to a black undercoat on the curved brick walls. On this page, 12, Saul Steinberg is at work on the part of the labyrinth shown in 6.*

7

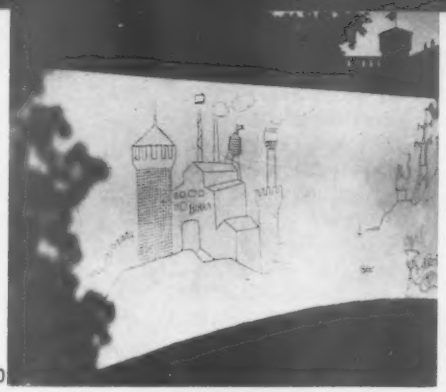
to the climax of the Calder mobile, 7, the drawings changed from cowboys and cities, 3, to skaters and dancers, 8, thus herald-

8

ing the movement of the sculpture, which was framed in a brick box and reflected in a pool of water.

Taking inspiration from the antique conception of a labyrinth it was the intention of the architects 'to draw the visitor on by a dynamic sense of surprise, and while ensuring that he followed the theme, place him in a poetic relationship with reality in the park outside.' This was done by leaving gaps in the walls at carefully predetermined places, or by permitting the visitor to see over them. Thus, at one point, a pair of delightful Steinbergian mermaids were found to have a nineteenth century

9



10

cast-iron counterpart on a bridge seen through a hole which they flanked, 9, at another the tower of Milan Castle revealed itself over the top of a wall; here the eye moved down to discover the castle's resemblance to a brewery, 10.

Throughout this serious caprice the architects showed an acute understanding of picturesque theory, exploiting to the utmost the virtues of irregularity, contrast and surprise and, as the two previous illustrations show, 'consulting the genius of the place in all.' Where the place failed the architects' genius remoulded it. In 6, for instance, a small hill was thrown up from which to view the cities of the plain. It was roughly two feet high but, placed after a long flat stretch, at a point where the space narrowed and the visitor took a sharp turn, the effect was as of several hundred feet.

The visitor entered the labyrinth by the

11

white wood fence shown in 11, which narrowed and then widened as it passed through a thicket, subtly reminding him to slow down and prepare for the unexpected. From then on he could not but surrender himself to the magic world of Steinberg and Calder, to brick, marble and stone played upon by great swathes of shadow, 4, with their counterpoint in the flickering mosaic of leaves, to a world in fact which is our own, with its wirescapes, its hoardings, its masterpieces alongside its most inane frivolities all translated into poetry, or was it architecture, or landscape? No small achievement, whichever it was, for one part of one Triennale.

Ian McCallum

12

TOWN PLANNING

NEW BARBICAN

The New Barbican scheme, conceived by a committee under the chairmanship of Sir Gerald Barry, demonstrates a degree of comprehensive planning which has not previously been seen in the City. It offers a contrast to the negative alternatives now current: either piecemeal development or so-called 'comprehensive' development.

The folly of piecemeal or sporadic development, where there is no guide to where anyone is going, is obvious. The so-called 'comprehensive' development, which is in fact only a form of visual control, is a compromise almost equally disastrous in its long-term results. Would-be developers' requirements are co-related on the basis of existing demands for the site *as it is* and a three-dimensional model produced to which each individual developer is expected to conform, with full control of elevations, height and type of function. The New Barbican committee argue that such a form of straitjacket plan would be fatal to the future of the part of the City for which their scheme is designed.

Both piecemeal and 'visual control' development depend in practice on individual schemes, each with its own contractors building at different times with different organisations, each on his own congested site. This is uneconomic. By contrast a truly comprehensive development, where the site is treated as an entity, would provide the opportunity to reap to the full the economic benefits of building on so large an area, particularly in the matter of excavation.

The New Barbican architects, Messrs. Sergei Kadleigh, William Whitfield and Patrick Horsbrugh, set out to prove that it is possible to develop a site of 40 acres as a fully comprehensive scheme; compre-

hensive in that visual, social and functional aspects are united, making out of the total something far greater than the sum of each separate aspect. It is an attempt to bridge the gap in scale between a building and a community, and the same principles of planning have been applied on a larger scale that an architect applies to an ordinary building problem.

In the same way that no amount of study applied to a single leaf will tell anyone what a tree is like, it is not by studying the problem of the building that the needs of a community can be gauged. New Barbican offers a line of approach to the regeneration of our towns. So far, in rebuilding central areas, we have done nothing sufficiently bold or imaginative to refocus attention on those areas—nothing to catch the public imagination. Here is an attempt to combine the lessons learned from the two great schools of architecture which have appeared since the industrial revolution; the Chicago school, who rebuilt the city after the great fire, and Le Corbusier's European philosophy of architecture. The former perfected the economy and technique of high buildings whilst the latter pointed the way to the multiple use of land through the symbolism of the *piloti*.

Throughout, the aim in the New Barbican scheme has been to consider the differences between people instead of treating them as units, and to provide flexibility. There is no question of forcing anyone to live in a certain way. The aim is to give to an area of ground the possibility of many more sorts of use than exist at present. If left to itself this site would contain only offices; it would be a no-man's land after 6 p.m. The architects have attempted to give it the greatest imaginable variety.

The simple elements of the scheme are here shown in sketch form related to the actual site. This is bounded on the west by Aldersgate and Barbican station and on the east by Moorgate station. Between the two, running diagonally across the site, are railway tracks (including the Metropolitan railway's inner circle line) 30 feet below ground level. A GPO tube railway runs along the southern boundary at a depth of 72-75 feet. There are also GPO cables enclosed in a metal duct at 50-52 feet. The only buildings left standing on the site are the church of St. Giles, Cripplegate, Ironmongers' Hall and a few buildings round it, a fire station, the partially ruined British Railways Whitecross depot, a small group of transport buildings and some buildings at the corner of Aldersgate and Barbican.

The scheme is being formally submitted to the City Corporation so that it can be examined jointly by them and the LCC.

K.G.B.

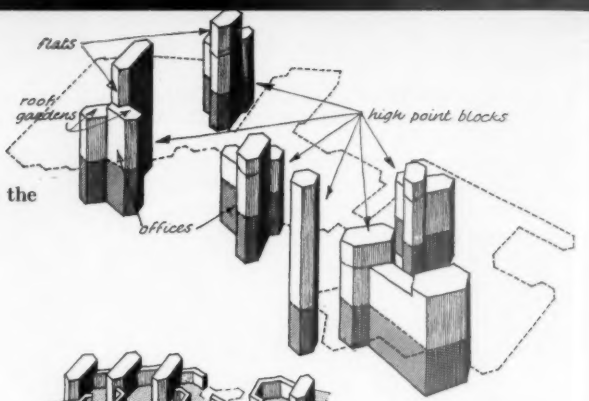
5 point blocks There are five tall office blocks of varying heights, with flats occupying the upper floors. The flats will use the roofs of the offices as gardens.

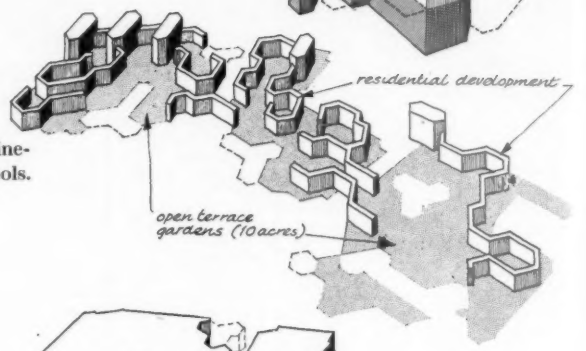
4 upper level development Residential accommodation in the form of 4-storey maisonettes and flats will stand on the terrace formed by the roofs of the office blocks, set in about 10 acres of terrace gardens together with shops, cinemas, restaurants, pubs and schools.

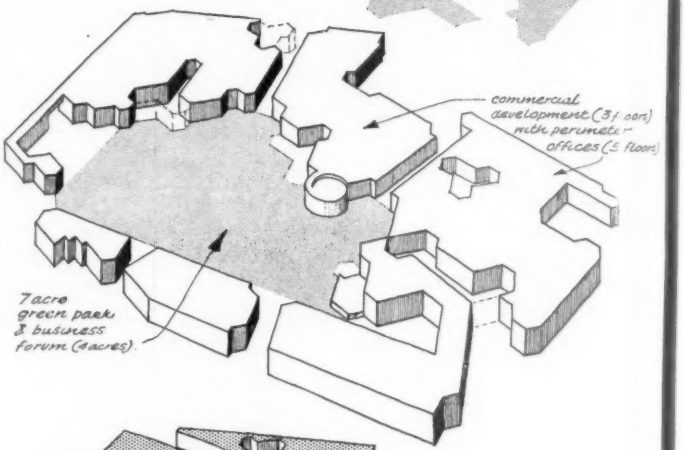
3 ground level development The unexcavated historic buildings area provides a 7-acre park. Another 4 acres is set aside as a business centre. Around the surviving Ironmongers' Hall (also on unexcavated ground) sites could be found for rebuilding the destroyed city companies' halls, and at this level north-south and east-west roads traverse the site. These areas are surrounded by three floors of commercial and industrial development and five floors of offices, creating an upper level 45-50 feet above the ground linked by bridges to form a continuous terrace served by roads, escalators and lifts.

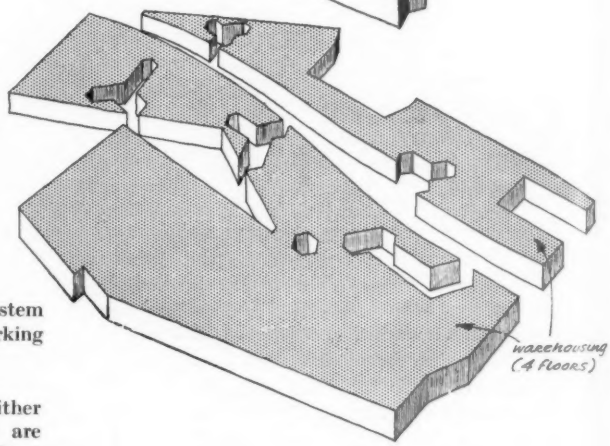
2 low level development Rising to ground level from the reduced level obtained by excavation are four floors of warehouse accommodation with its own road system and railway sidings and with parking for at least 3,000 vehicles.

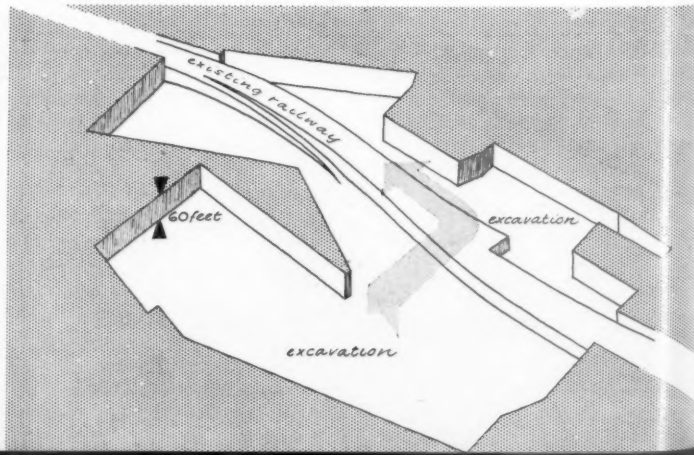
1 excavation Large areas on either side of the existing railway are excavated to a depth of about 60 feet, keeping to the normal angle of repose of the soil and thereby saving costly retaining walls. The portion containing historic monuments (including St. Giles's church and the Roman wall) becomes a park standing on a 60 ft. bluff. The railway traverses the excavated portion on a 30 feet embankment.







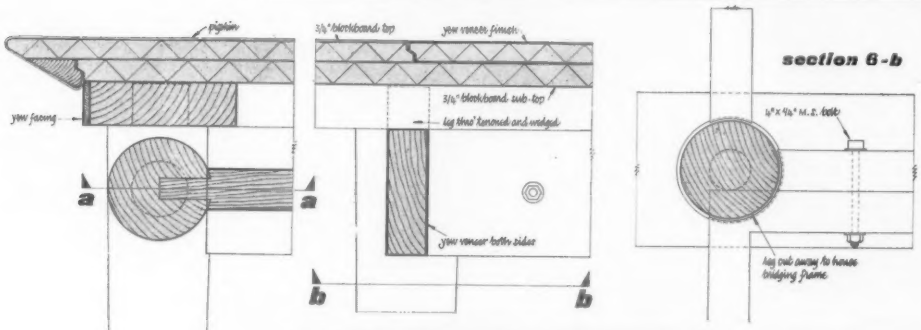




SKILL

A MONTHLY REVIEW
OF BUILDING TECHNIQUES & INDUSTRIAL DESIGN

1 interiors
2 design review
3 techniques
4 the industry



details of board room table shown in the photograph on the right. The centre of the table is English yew, the surround is covered with pigskin.

1 INTERIORS

OFFICE AND BOARDROOM IN MILLBANK, LONDON, S.W.1.

R. D. Russell: Designer. K. G. Browne: Chief Assistant.

The decoration of these rooms was a part of the general restoration of No. 7, Millbank, undertaken by the British-American Tobacco Co. Ltd. in 1953 *after dispossession since* 1939.

the board room fine in proportion and scale, suffered from a ceiling irregularly divided by heavy structural beams and from windows looking only into a light well. The outlook has been masked permanently by Venetian blinds and the high intensity of artificial lighting required

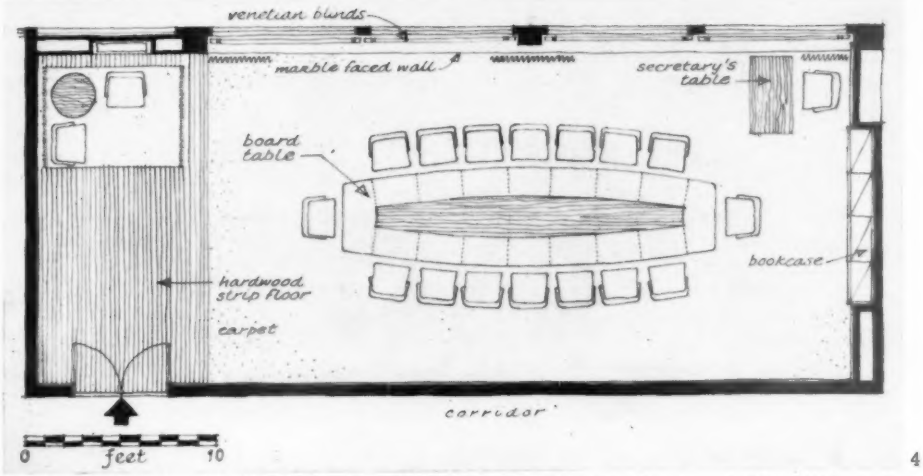
as a result of this has conditioned the treatment of the ceiling.

The table is placed towards the far end of the room to leave the entrance area free of furniture. The ceiling over the entrance area is dropped to cover the beams and lighting points recessed into it. The lower ceiling level is continued round the rest of the room as a flat cornice for cold cathode indirect lighting reflecting off the higher ceiling, in the centre of which, and above the table, is suspended a panel containing direct tungsten lighting for the table itself. This panel, covered with black hide and enriched with a pattern of gilt studs, was designed by R. Y. Goodden.

The definition of the Board Room area is further emphasised by an inset carpet on which the table and chairs stand centrally. The single window in the entrance area was filled in and the recess so formed is used to house a lighted tank of tropical fish. Dark green serpentine marble is used to face the whole of this part of the window wall and continues as a dado along the rest of it below the windows. The white Venetian blinds fall from ceiling to dado and the smoke-blue corded silk curtains from ceiling to floor. The wall facing the window is panelled with moulded boards of grey-brown Australian black bean and the entrance doors set in this wall are covered with black hide. The two end walls are flush panelled with veneered boards of Australian black bean. Into the far end wall is set a glazed bookcase of black bean lined with English yew with leather-covered slides and storage cupboards enclosed by veneered falls below. The table top of slim barrel shape is divided into pigskin-covered tooled and gilt panels to provide 16 places. The centre panel and the legs are of yew. The board chairs

2

3



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2, entrance doors covered in black hide and set in black bean panelling. The shaped push plates, kicking strip and frame are also made in black bean. 3, secretary's table and fitted bookcase unit. This wall is flush panelled in contrast to the vertical boarding shown in 2. 4, plan of the board room.

are yew, the seats and the formed plywood arms and backs being upholstered in Dunlopillo and covered in black goatskin; the Chairman's chair is similar, but slightly larger and covered in crimson goatskin. A separate small table of black bean with telephones is provided for the Secretary of the Company. The inset carpet is in narrow equal stripes of olive brown and french mustard.

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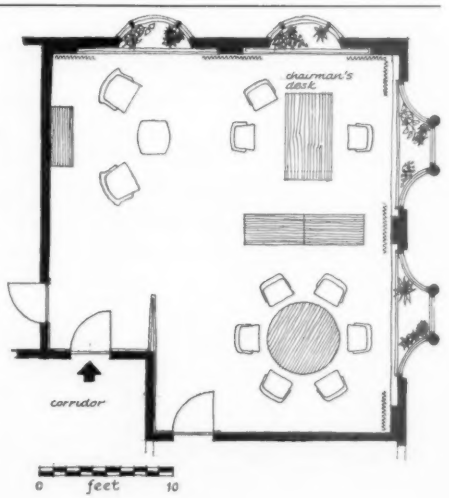
the chairman's office occupies the south-east corner of the third floor with a magnificent prospect of City and river. The importance of the windows which frame this view is emphasised by a boarded and louvred dado containing the radiators and running across both window walls. The dark grey granite top of the dado is carried into the window bays where arrangements of succulents and other small plants provide a close and small-scale alternative interest to the view. The planting was designed by Mrs. Maria Shephard. To prevent draughts and heat losses the window bays are cut off from the room by plate glass slides. The curtains and the Venetian blinds behind them to control the sunlight fall from ceiling to dado top.

In addition to its function as an office with desk and other equipment the room had to provide a conference table for six people, and also a group of easy chairs for informal discussions. The plan shape—a blunt L with windows on the outside angle—divides naturally into three areas and this division, created by the grouping of the furniture, is emphasized by the



position of the lighting in relation to the three groups. On the inside of the L the door from the main hall and the communicating doors to the two adjacent offices are joined by moulded boarding to form one unit and the boarding extended into the room as a screen to the entrance with pegs for hats and coats. On the two walls flanking the windows provision is made for varying arrangements of pictures; the suspended leather-covered panels which light these and the lighting panel below the main beam were designed by R. Y. Goodden. The ceiling paper is a clay grey and gold rosette on a white ground; the wallpaper a white stripe on the same grey. The joinery is bright tan Honduras mahogany and the furniture Brazilian rosewood. Tobacco brown and black goatskin is used for the upholstery and the lighting panels are covered with the same black goatskin tooled and gilt. The carpet is very dark olive, the curtains yellow and the Venetian blinds dead white.

5

6

7

5, looking across the chairman's office to the conference table. 6, easy chairs used for informal discussions. 7 and 8, two views of the chairman's desk which, like the other furniture in this room is of Brazilian rosewood.

8

HEADQUARTERS FOR A TRADE ASSOCIATION

Misha Black and Ellis Miles: Designers

This is a conversion of a Harley Street house for the Drapers Chamber of Trade. The designers, of Design Research Unit, have aimed at elegance without ostentation, and a comfortable atmosphere which may be satisfactory over many years.

entrance hall A draught excluding lobby has been built in the entrance hall, this being carried to the full height of the ceiling, the existing cornice being extended so that the new lobby appears integrated with the structure of the building. The door from the lobby echoes exactly the profile of the main entrance door and fanlight, and is constructed of mahogany and plate glass. Only one leaf of the new doors opens, this being provided with handles of cast bronze and carved wood covered with black leather.

1, *entrance hall.*

The banquette screens the staircase, is constructed on a steel frame and is covered in a special Tibor woollen fabric of bottle-green speckled with black; it was designed by Misha Black in collaboration with Ernest Race.

conference room The original rather disorganized shape of the room has been corrected by continuing the plaster cornice in front of the window bay and forming a soffit to the bay into which the curtain tracks are recessed. The walls are covered in a late Regency paper in two shades of crimson and the carpet is gunmetal Curlsax sunk into a strip mahogany surround which allows the carpet to be rectangular in shape and thus reversible. The light fittings are of enamelled steel and brass rod, the shades being of translucent red leather. The curtains have been specially woven in dark green and black with a small amount of gold thread. The ninon curtains have a textured stripe one inch wide.

Chairs are of a standard pattern in mahogany and black leather. The tables have been specially designed: they consist

2, the conference room. The wallpaper is in two shades of crimson, with all the paintwork glossy white; the wall-clock is a Regency one, by Vulliamy. The chairs are of mahogany upholstered in black leather.

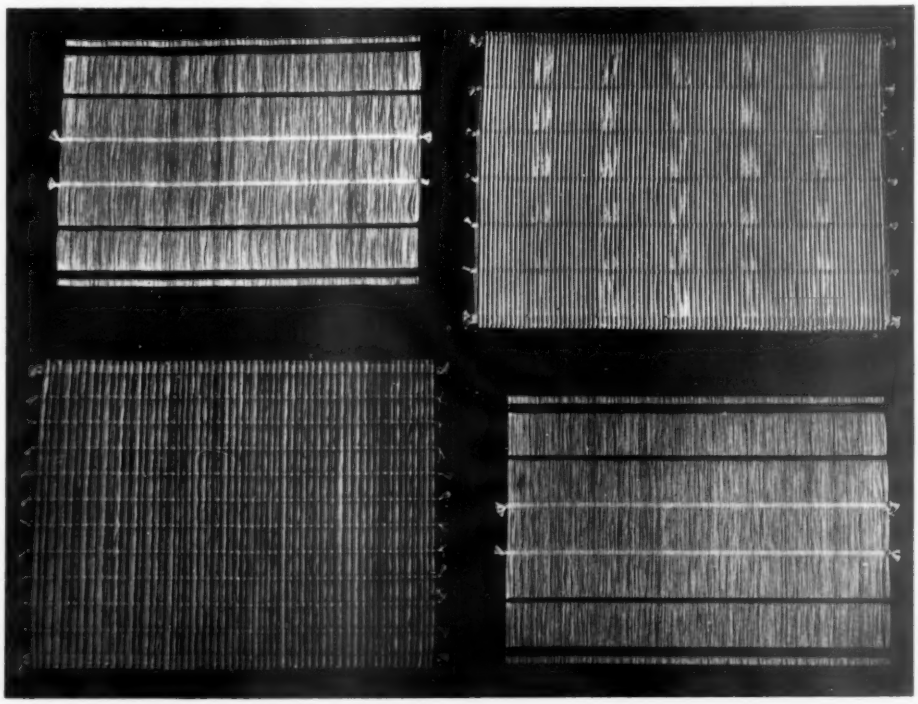
of individual units each 4 feet 6 inches by 2 feet 3 inches to allow for different arrangements for various types of meetings. Removable sections are provided to enable the table to be extended to 20 feet 3 inches long over-all. The plaster cornice is enriched with a single line of gold leaf and the door furniture is a replica of an Adam door-set cast from the original brass mould. The white marble fire-place was in the room and a new Blue Belge hearth has been provided together with an eighteenth century fender and fire basket. Other embellishments are a Chippendale gilded mirror, a Regency clock by Vulliamy, and some prints of London shopping streets by Thomas Shotter Boys. ***colour*** The lobby woodwork is in gloss white with the flank walls and barrel ceiling in light sage green. In the entrance hall the walls are light tobacco brown with columns and skirtings relieved with gloss white: the rear wall is dark forest green with the lift shaft in graphite grey. All the paintwork in the conference room is gloss white to contrast with the wall paper.

2 DESIGN REVIEW

crafts exhibition

The gulf that used to exist between the beautiful productions of craftsmen (Good) and the hideous but immeasureably cheaper products of the machine (Evil) seems finally to have closed. This is the (possibly unintentional) message of the Autumn exhibition at the Crafts Centre of Great Britain. The blessed air that one breathed in craft shops a generation ago is not here discernible. The astonishingly brilliant colours, the sunshine pouring through the curved eighteenth-century window on to the unpolished oak, the quiet of the mellow market town in which these shops so often seemed to occur, the pleasantly eccentric air of the lady in the handwoven skirt who was in charge; all this has made way for a better living and a more sophisticated attitude in the craftsman-designer. The primary colours, then so heady by contrast with the sordid alternative offered by commerce, have likewise given way to colours keyed to the general trend of living. Coming in from the street without noticing that this was the Crafts Centre of Great Britain one would be struck by the high quality of workmanship, but by an air of 'good taste' rather than delight in the designs. Even allowing that the first requisite of an attractive shop was there —something one wanted to buy— in spite of the well-considered layout the air was muted rather than exuberant. I can think of several shops where the standard of design is more stimulating. This is presumably because the crafts have lost their prerogative of art. Industry has admitted art, and her gain is craft's loss.

In the days when craft shops were exciting but eccentric, their prices were appalling. On this plane, too, the gap has closed. Surprisingly the craftsman finds



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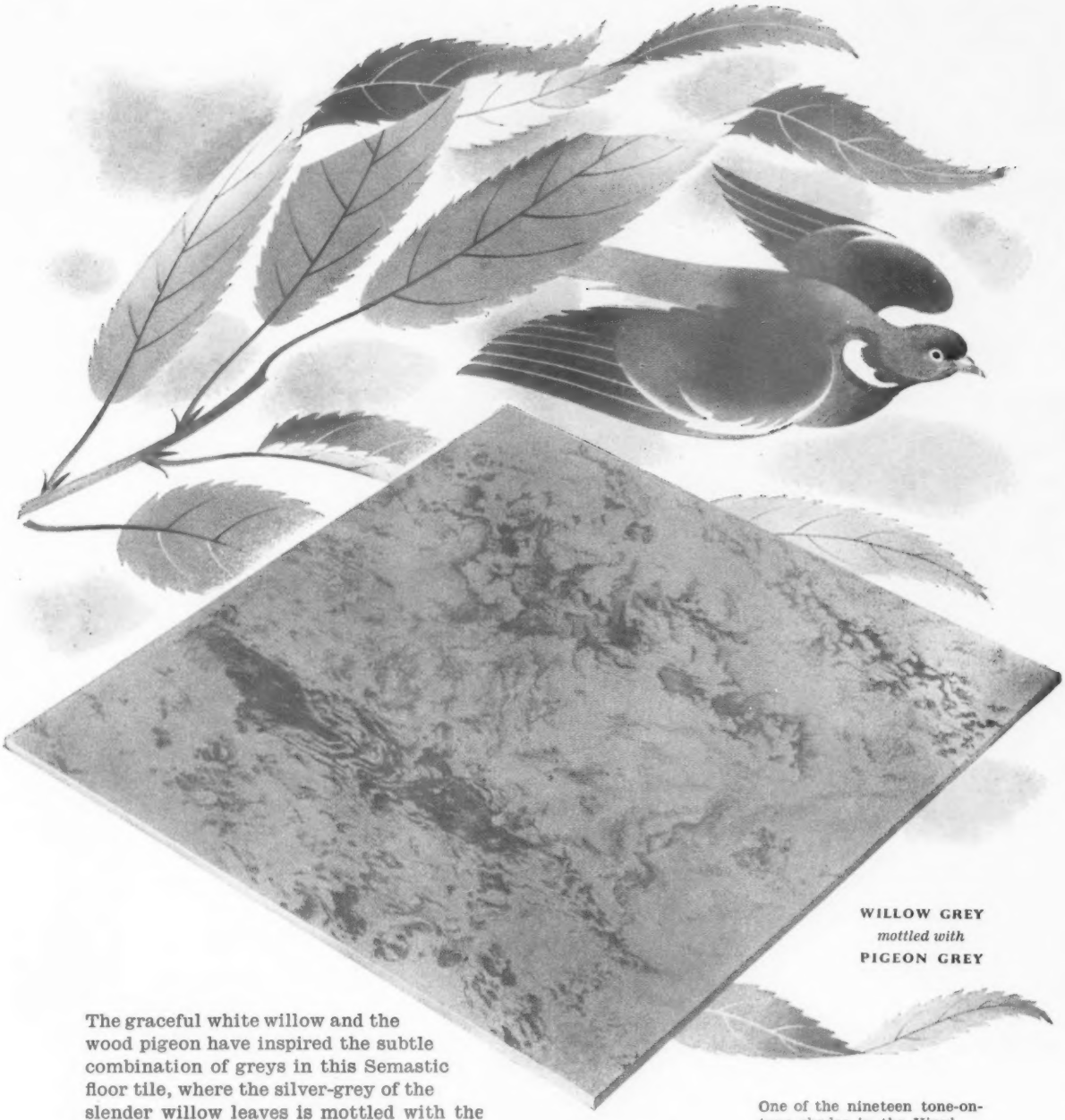

WILLOW GREY
mottled with
PIGEON GREY

The graceful white willow and the wood pigeon have inspired the subtle combination of greys in this Semastic floor tile, where the silver-grey of the slender willow leaves is mottled with the darker grey of the pigeon's wing. Craftsman made and craftsman laid, these tiles are noted for their exquisite colourings.

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458/58

Marleyflex Floors were made for boys like Bill

Boys and dogs even the well brought up ones, have one weakness in common, they both think the proper place for the garden is inside the house. This can be a source of justifiable irritation to parents. Luckily, no matter how much mud and debris is spread around, a quick run over with a damp mop instantly restores a Marleyflex floor to its original freshness.

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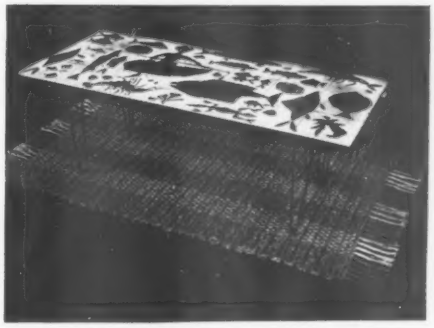
that the higher pay of unskilled workers means that he can now compete commercially.

Probably the most interesting product to the consumer will be the simple rectangular table mat, large enough to accommodate cutlery and glasses as well as a plate. These are in rush, raffia, cane and combinations of these materials, 1. The patterns range from the simple texture of woven rush in its own colour to excellent plaid effects in fawns, reds and yellows. These may occasionally be seen elsewhere, but not with so luxurious a choice of pattern. Prices from 7s. 6d. to 12s. 6d. each.

Peter Collingwood's rugs of dyed sisal and rush are attractive in a pleasantly casual manner. One can only guess how they will wear. Compared with the immense solidity of traditional rush work they look alarmingly delicate.

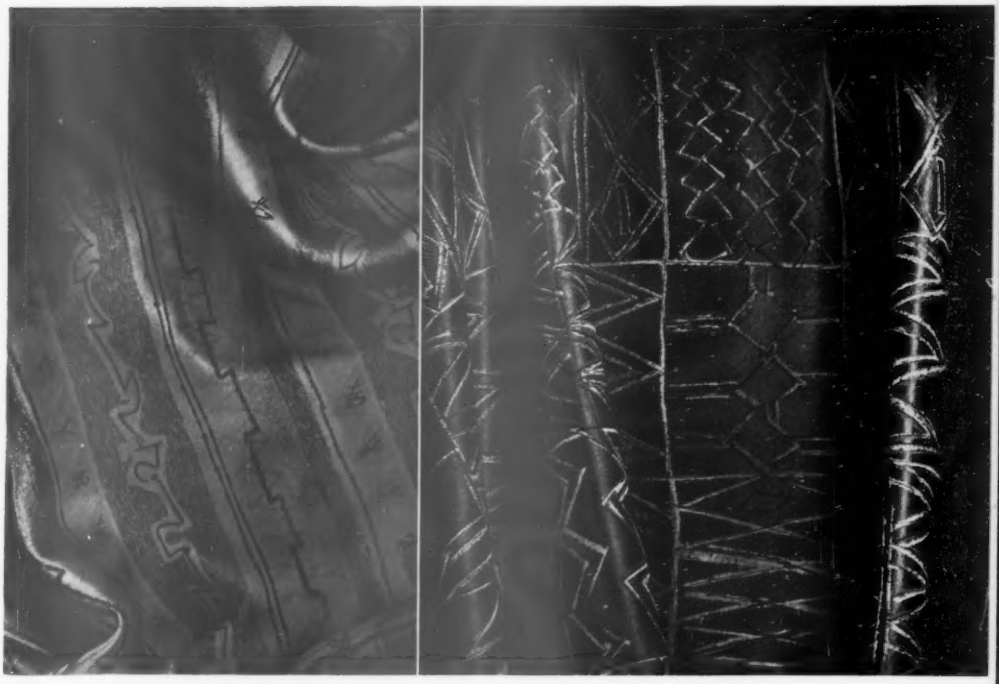


2, *Fish Table by Nicholas Vergette, standing on a rug by Peter Collingwood.*

A difficult problem of interior decoration is the occasional table for a small fireside which will be neither chic nor shabby. This is very nicely solved by Nicholas Vergette with his Fish Table, 2. The surface is of white tiles decorated with fish in a beautiful greenish brown, giving an effect both fresh and camouflaging. The legs are carried out elegantly and simply in wire. Price £21. **Diana Rowntree**

Henry Moore textiles

When an artist takes time off from his usual medium and makes a quick raid into other territory the results are extremely chancy. In the normal course of events the vision of an artist of Moore's stature continues to work until it affects the vision of the whole community. Somewhere during this process it exerts a powerful influence on commercial art, and it is by means of such things as fabrics that it reaches its widest public. In short-circuiting this process the artist is pretty certain to have some fun, and the novelty of the work may produce something original as well as highly competent in the new field, 4. He may on the other hand fail to achieve the scale or the idiom proper to the job he is attempting. This seems to have happened in the case of 3. It reads as a page from a notebook, thickly covered with jottings of ideas for designing a fabric, The colour range is one that is usually regarded as 'useful' for Interior Decoration. That is to say they are 'warm' colours and most of them offer very little contrast to dirt. Unfortunately the effect is in fact rather gloomy. This is often the fate of colour schemes intended to be 'useful'. It is not impossible for a designer to come to terms with dirt by using small areas of brilliant colour among subdued neutral hues, but it demands great skill. The more daring approach, of choosing the colours for their gaiety and beauty, and facing the cleaners bills later, is generally more rewarding. The excellent fabrics formerly designed by Terence Conran for Whitehead's with brilliant vermilion and green and black on a white ground were conceived in this way. Both Moore fabrics were designed for David Whitehead and are screen-printed on heavy rayon satin. Price approximately 40s. per yard. **D.R.**



3, *and* 4, *two designs for David Whitehead by Henry Moore.*

3 TECHNIQUES

ARCHITECT/MANUFACTURER CO-OPERATION: 2

by Robert Post

It is probably true to say that as much of the new material of architectural history of our times is embedded in the archives of manufacturing firms as in architects' offices.

Though it is disconcerting to find that so large a share of design initiative belongs to organisations whose chief aim (as they themselves would be the first to admit) is to make money, it is none the less a fact which it would be unscholarly to disregard. But those who feel that a certain disinterested passion is essential to the progress of what is, after all, an art may take encouragement from the equally evident fact that where the

manufacturer's contribution has been most fruitful, there has always been an architect to assist.

In the May issue we discussed the general problems which beset collaboration between these two parties. This month we discuss the case history of a single firm, Messrs. Hills (West Bromwich) Ltd., whose name persistently comes up whenever this subject is mentioned.

The firm takes its name from a Mr. Bernard Hill, who, in partnership with a Mr. E. D. Hinchliffe, set up in 1932 a firm called 'Hills Patent Glazing Ltd.' In later years it was Mr. Hinchliffe who became the dominant figure. He has two particular characteristics: he is able to work very hard, for long periods; and, secondly, while possessing all the executive power that belongs to a managing director, has also, as a qualified structural engineer, the personal ability to initiate and maintain a sense of direction in technical matters within the firm. He is in fact the director-designer, the technician-in-charge, so rarely found in the building industry.

In the period before the war the firm began to branch out beyond patent glazing, and made such things as windows, lantern lights, deck lights, lay lights, office partitions, verandahs and domes. Various associated companies were formed —Universal Steel Doors, for example, in 1936, a company which made large sliding doors for aircraft hangars, and later manufactured complete hangars.

When the war came the firm was able to take on various light engineering contracts for the Government—anchors, Bailey bridge components, rocket guns, invasion equipment, pulley blocks and gun mountings, for instance. One particular type of work led to the establishment of a new company, Chain Developments Ltd., which manufactured electrically welded steel chains for the Admiralty and chains for the flail tanks used by the Armoured Corps. The war, in fact, gave the firm considerable experience in welding, especially jig welding.

steel frames for the housing shortage

All major efforts at this time, of course, went into war work; but well before the end of the war the Ministry of Works was exploring post-war housing problems, and development work was done with various firms. Back in 1942, actually, Hinchliffe had worked on designs for a light welded hut structure, and had built the first prototype at the West Bromwich works. It is still standing, and is now known in the firm as 'Black Hut.' In the same year many patents were taken out covering methods of welding and producing the steel beams and columns that have become typical of Hill's structures. In 1943 a two-storey prototype house was built in the works at West Bromwich, using the round lacing bar as the web of a light steel joist and column section. The next year a development of this was provided for the Ministry of Works' demonstration ground at Northolt (see 'Demonstration Houses,' HMSO, 1943), where some flatted dwellings were also built. Shortly after this several dozens of houses were built for the Ministry at Bushey.

Meanwhile Mr. (later Sir Herbert) Manzoni, the City Engineer of Birmingham, was tackling his own housing problems; and in this connection Hills provided two prototype houses at Alum Rock in 1944 (see Post War Building Study No. 23). Subsequent to this, contracts were secured with the LCC, with Birmingham Corporation and other authorities, in particular the Scottish Special Housing Association, for which 500 houses were provided.

The structural principles for all the houses were the same—'Hills Presweld Steel Framework'—the welded lathing-work framing consisting of stanchions, first-floor beams, roof trusses, longitudinal ties, gable framework, cantilevers and bracings. Truss spacings were, however, varied to suit the client, and ranged between 2 feet 0 inches and 3 feet 6 inches (some were built on a 3 feet 4 inches grid). The chief constructional advantage that the steel houses provided was a roof overhead early on in the job, permitting more subsequent work to proceed unaffected by inclement weather. Site labour was also reduced by the preforming of finished components that would otherwise have to be assembled on site: for instance, the steel window provided in one piece a soffit, jamb, window sill, and internal architrave to master internal walling. This is similar in some respects to the steel sub-frame that Hills have provided for their schools, and was supplied also to other constructors using poured concrete walls. Hills themselves also made no-fines walling blocks about 7 in. thick, with a spar finish outside, for facing their steel-framed houses.

The steel-framed house was an expedient for overcoming the post war shortages, and was finally put out of court by load-bearing walls. But separate components continued to be supplied for some time. Roof frame-

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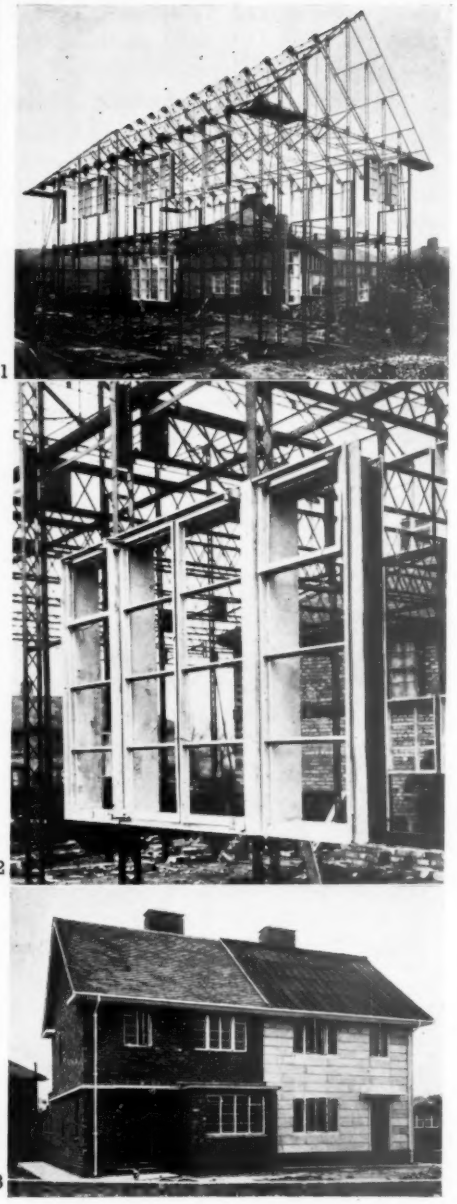

1, Hills frameweld used on a pair of experimental houses in Birmingham, 1944. 2, detail of a prefabricated window unit. 3, the Birmingham experimental houses as completed, the house on the right being clad with 'prefabricated' units and the house on the left with traditional bricks and tiles. This photograph illustrates vividly the prevailing attitude towards prefabrication prior to the schools programme.

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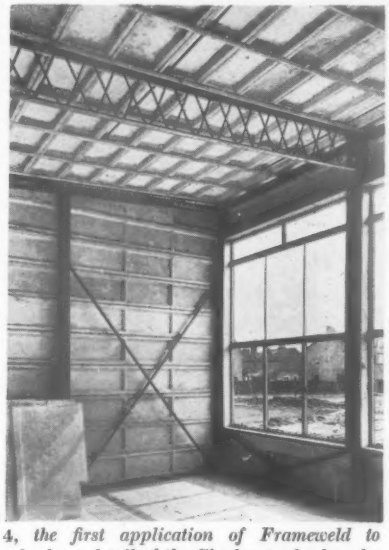
works, and floor joists were the principal items, the latter with light battens fixed to the top and bottom booms for nailing. During the period of timber shortage a very great number of joists were supplied for Airey houses.

Hills had been looking out beyond the housing field for uses for their steelwork, and had incidentally built some big new shops in presweld framing for their own factory in 1945, complete with precast concrete roofing slabs. They have since built quite a number of factories, factory canteens, hangars and other industrial buildings in various parts of the world, though of course the company is best known for its school buildings.

housing components adapted to schools

There was no gap between the house and school building programmes, which in fact overlapped. The steel houses for Scotland were built in 1946–7, and the first contact was made between Hinchliffe and Hertfordshire County Council in 1946. This contact has already been noted by various writers as one of those significant encounters in building history: it may be sufficient for present purposes to note what happened. The groups of architects working on development at Herts had to find a way of providing a great deal of school space in the immediate post-war climate of a shortage of labour and traditional materials. Hills had for sale the basis of a system of building: a Presweld frame (pitched roof) with lattice beams, concrete wall and roof blocks, steel windows—the whole based on the 8 feet 3 inches bay advocated in Post War Building Study No. 2. The encounter became significant when the architects decided to put one half of their team on user research and the other half on producer research. One architect did actually spend half of his time for several months inside the Hills factory, working out the structural implications of the educational needs being unearthed by the others; these others were trying out planning solutions on different sites and establishing the degree of flexibility that a system of building should possess. The results, in their quiet way, were startling. The first thing that the architects said was that the bay system, which had all the authority of the Building Study behind it, was unsatisfactory for schools, as it had a directional emphasis and thus inhibited free planning. Hills accepted this, and as a result the first school at Cheshunt was based on a grid rather than bays. This school was intended as the prototype for solving Hertfordshire's problem, and as such went to great lengths to side-step typical post-war building troubles: the ground floors, for instance, were of suspended precast concrete in an attempt to cut site works to a minimum; the steel frame was made up of small sections welded together—for these were easily obtainable from the smaller stockists in the Black Country at a time when the rolling mills were very short of the bigger hot-rolled sections; fibrous plaster was tried out as a walling material.

Hills built the first part of Cheshunt as a 'one off' job, with no guarantees of further business, though of course it was intended to be the first of a line. After it had been built, the architects sat down to analyse it: and the biggest thing that



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4, the first application of Frameweld to schools: a detail of the Cheshunt school under construction. Note the pitched roof. 5, below, the main entrance to the school at Cheshunt.

stood out was that the pitched roof, which had been retained (in mono-pitch and double-pitch versions) from the original Hills system, was complicating the range

5

of units needed for a system of building. Additional column lengths, for instance, had to be provided purely to take account of the slope of the roof; special cladding slabs were needed; junctions between parts of the building of different heights were severely restricted where pitched roofs abutted. So the next attempt, which was made on the second part of the Cheshunt school and on the Essendon school, had flat roofs except for the bigger span assembly hall; it being reckoned that in a single-storey school the assembly hall roof would normally ride freely above the others.

The Essendon school, if it had imperfections, showed that the system worked; and before anybody had time to draw breath Hills were given a programme of seven schools. This necessity for suddenly changing from experiment to production is typical of all development work that is successful: striving for perfection has to give way to compromise; problems that cannot be solved without delay must be shelved or side-stepped. In this case it was the eaves gutter block that was one problem; it was of a novel design, a metal gutter integral with a concrete eaves 8 feet 3 inches long; it was expensive and it leaked. And so the problem was sidestepped by giving the first seven schools no eaves at all. For a series of reasons, these seven schools also had their cladding blocks spanning vertically, and for economy reasons these were made in grey cement. The general result was an appearance that a layman who was not very susceptible to formal values would have described as 'utility.'

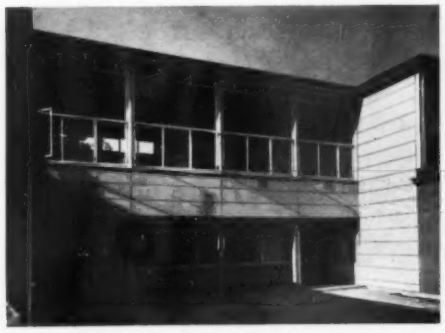
But whatever the critics had to say, the system was a success. It proved adaptable to differing site conditions: it produced school places fast and at an acceptable figure. A series of primary school programmes followed, building up to 20 schools a year. Other authorities, such as the LCC and Derbyshire, became big customers; and it was on schools for these customers that Hills continued to provide and develop their own walling (on the later Herts schools Hills did not generally supply cladding). Expansion faced Hills with the typical problems of any successful but smallish firm—the raising of capital and the maintenance of deliveries during a period of very heavy demand. The outward result was the consolidation of the series of companies into the firm of Hills (West Bromwich) Ltd. in 1949.

The Herts 8 feet 3 inches frame had been developed initially as a complete system of building for single-storey schools. Many architects, of course, subsequently combined parts of it with details of their own design. An example of this was Hill's first

double-storey school built at Stevenage and designed by Yorke, Rosenberg and Mardall.

A standardized form of double-storey construction on the 8 feet 3 inches frame was then developed with the L.C.C. Architects Department, and this was used repeatedly not only by the L.C.C. themselves but by other school authorities in different parts of the country.

One of the reasons for the early experiments with the vertical slab was the desire for windows not spanning a whole 8 feet 3 inches width. For planning purposes, also, an 8 feet 3 inches module was found to be rather big in scale. The newly introduced Ministry of Education



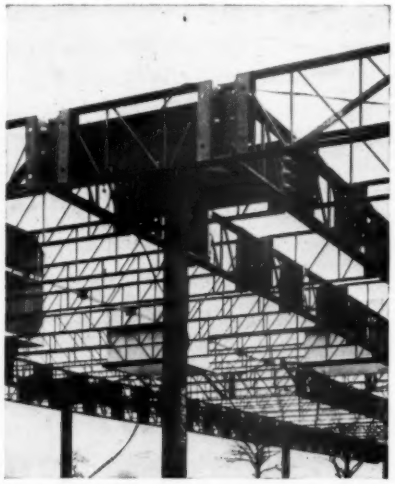
6, *Bessemer Grange School, Denmark Hill (LCC): an example of the standard 8 foot 3 inches frame adapted for use in double storey construction.*

cost limits inevitably penalized any system that wasted space; and the secondary school building that was now starting demanded more complex planning solutions than those for primary schools. In this atmosphere the lesson was learnt that a module should not be based on room size (as 8 feet 3 inches was: one-third of a 24 foot classroom) but on some smaller, more universal unit. At this time a sub-committee of the RIBA Science Board was considering likely modules, and had produced an interim report in favour of the metre (3 feet 4 inches) module. And so when Herts decided to experiment with a smaller module they chose 3 feet 4 inches.

Another lesson that was well understood was the value of a modular arrangement of building components. In the case of the Hills 8 feet 3 inches system the frame (the most important part of the system to Hills) was 'on the module,' and the external cladding was forward of it. This gave the frame the greatest chance of simplicity at corners and junctions, but inevitably led to special details for cladding slabs and windows at such positions. To put cladding and frame both on module was difficult because of complications where the two met. In this situation a new group at Herts developed the idea of completely divorcing the frame from cladding, by putting the latter on the 'half module'—an idea seen in embryo in Californian timber schools and elsewhere. The columns, in fact, were to be always free-standing, either inside or outside the wall line, and the cladding was now ready for complete standardization. This was in fact done in the first instalment of the Oxhey Clarendon School—a two-storey section of a secondary school and the cladding used was Holoplast on a special frame designed by Hills. The frame, naturally, was an unconventional one; and although in principle simple had com-

7, *Oxhey Clarendon School (Herts CC) using Holoplast cladding on a Hills frame.*

plications of its own. If the beams were placed on the half module to coincide with the columns, then the partitions would not coincide with the beams; vice versa, if the beams were placed on module to permit easy partition fixing, then the columns needed spiral mushroom heads reaching out to support the adjacent beams. The first part of the Clarendon School had the former solution, and the frame (also by Hills) for the Holoplast



8, *Boreham Wood Primary School (Herts CC). Detail of the Frameweld construction showing the adaptation of the column head to take the beams on the half module.*

9, *detail of Boreham Wood Primary School as completed.*

school at Boreham Wood used the latter solution. Constant depth beams, spaced at 3 feet 4 inches centres, with suspended ceilings below, were typical of both these schools.

As has been said, the Herts schools did not generally use Hills cladding, though other authorities did. The newly formed development group at the Ministry of Education now set about its own 3 feet 4 inches development, based on the idea of using Hills for both wall and frame, and of providing a building shell that catered from the outset for allied trades and services. The result is seen in the Wokingham school, which has been the subject of many articles and its own Ministry Bulletin. Its frame was not cheap, though in simplifying other trades it paid for itself. The sizes of the columns, for instance, were chosen so that they were concealed in the partition thickness. Architect-manufacturer collaboration was very close, and a single-leaf, dry-fixed external wall was developed for which Hills made the 3 feet 4 inches by 2 feet 0 inch 'sandwich' concrete slabs. They also supplied the precast concrete floor slabs, and the windows, door frames, etc.

separate developments

One aspect of the history of Hills has in fact been their gradual expansion into more and more sides of the building industry. As we have seen, they have been making precast concrete and all items of incidental steelwork for some years. They have recently acquired an old-established London plasterwork firm, and can now supply the fire-resisting plaster casing for their columns;

[continued on page 413

they are currently experimenting with suspended ceilings. An item (now almost a side-line) that they have handled from the beginning is, of course, patent glazing. When the Architects' Co-operative Partnership, as it was then called, built the Brynmawr Rubber Factory, they used in it a wall made of patent glazing; and when they recently designed a new study block for Bryanston School they approached Hills and jointly developed the idea of building the external walls in patent glazing, hung on a Wokingham-type frame. This project is particularly interesting as being the first one that has been mentioned where a firm of private architects has been the collaborator. Development work takes time and costs money, and there are few firms of private architects prepared to do it. The Bryanston Study Block may be said to be the prototype for the considerable volume of walling done since in Hills patent glazing.

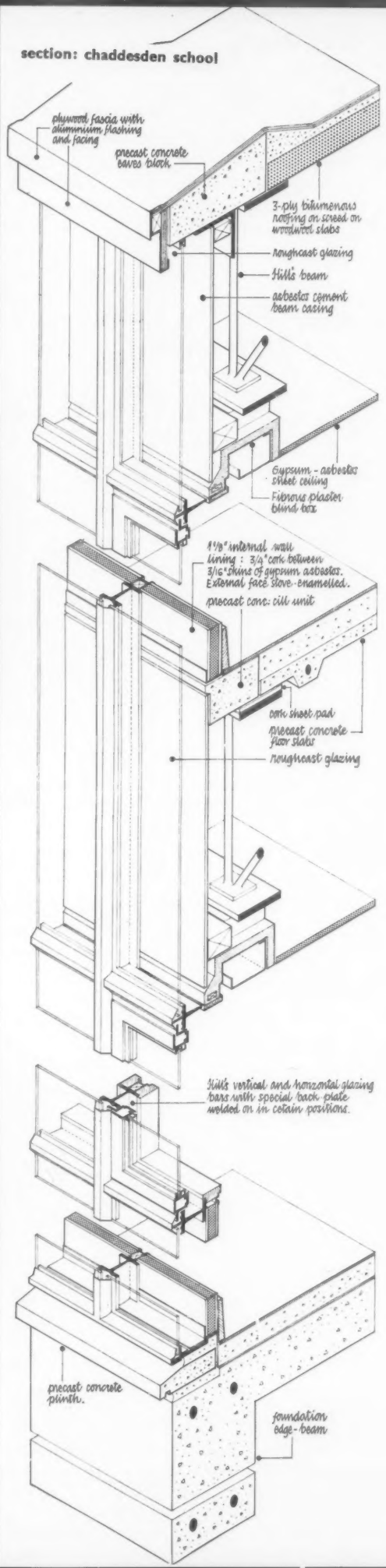
10

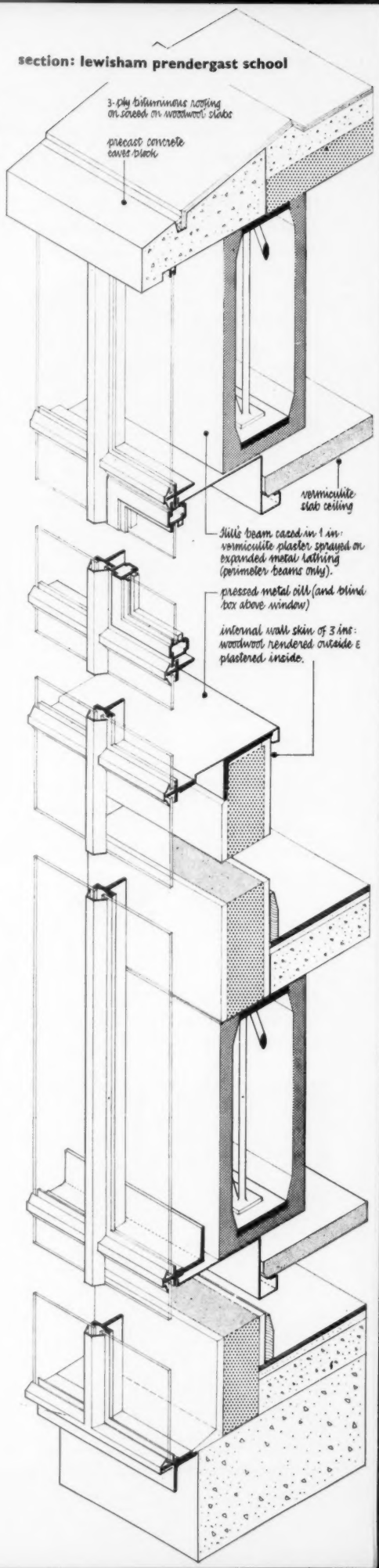
Two parallel architect developers have been at work on the evolution of this product: the A.C.P. themselves and the Architects Department of the L.C.C. Though both have been adapting the glazing to school curtain walls it is interesting to notice a slightly different approach in each case. This can be seen by comparing a characteristic detail from the A.C.P's. Chaddesden School (above) with another from the L.C.C's. Lewisham Prendergast School (right).

10, view of the main block of Chaddesden School, Derbyshire, and 11, of Lewisham Prendergast School.

11

Though the external effect of these two developments is very similar, the Chaddesden walling is supported on the vertical glazing bars and the Lewisham walling on


section: chaddesden school
plywood fascia with aluminium flashing and facing
precast concrete eaves block
3-ply bituminous roofing on screed on woodwool slabs
roughcast glazing
Hills beam
asbestos cement beam casing
Gypsum - asbestos sheet ceiling
Fibrous plaster blind box
1 1/8" internal wall lining : 3/4" cork between 3/16" skins of gypsum asbestos. External face Stove enamelled.
precast conc: cill unit
cork sheet pad
precast concrete floor slabs
roughcast glazing
Hills vertical and horizontal glazing bars with special back plate welded on in cetain positions.
precast concrete plinth.
foundation edge-beam


section: lewisham prendergast school
3-ply bituminous roofing on screed on woodwool slabs
precast concrete eaves block
vermiculite slab ceiling
Hills beam cased in 1 in. vermiculite plaster sprayed on expanded metal lathing (perimeter beams only).
pressed metal cill (and blind box above window)
internal wall skin of 3 ins: woodwool rendered outside & plastered inside.

the horizontal glazing bars. To achieve the former a back plate has been welded to Hills standard glazing bars, converting a 'T' section into an 'H'. The Lewisham version presents a higher degree of fire protection in that the structural beams are separately cased: it also shows more substantial aprons and a fuller use of Hills' pressed metal cills and blind boxes.

And so at present Hills has several systems available: more (perhaps) fully developed, and no single one able to satisfy the needs of all clients; nor yet has the 8 feet 3 inches module been jettisoned. Although several schools in the 'Wokingham' system have been built, it cannot be said to have sold in a big way, though its frame has definitely been the prototype for all Hills subsequent 3 feet 4 inches frames. The half-module arrangement at Oxhey and Boreham Wood has not proved a decisive answer, though it is too early yet to say that it was a blind alley. The patent glazing technique still needs work done on it before it will be accepted by all customers. Meanwhile this highly successful firm, with its mixture of empiricism and idealism, is still full of work; with, as is only right and proper in the commercial field, the biggest customers calling the biggest tunes.

Correction

We regret that in the article on Blinds which appeared in this section in the issue of September, 1954, we incorrectly attributed the "shop blind with arm which can be withdrawn in the same plane", illustrated in Fig. 5 on page 201, to J. Avery & Co. The mechanism illustrated was that of the patent "Slide-away" invisible arms and should have been attributed to The Artistic Blind Co.

4 THE INDUSTRY

GLASS AGE SOHO

Projects for what the Americans term 'square-mile redevelopments' have lately become an increasingly popular mental exercise, and the third in the series (which began with High Paddington) is the Pilkington-sponsored *Glass Age Development of Soho*, presented at a recent Press conference in order to 'stimulate thought.'

The project is the work of a team consisting of G. A. Jellicoe, Edward D. Mills and Ove Arup, who selected Soho as an area which presented particularly interesting problems, and was largely obsolescent. As a basic assumption they proposed the retention of the existing and tradition-steeped road grid of the area bounded by Regent Street, Oxford Street, Charing Cross Road and Shaftesbury Avenue, but with the whole zone underpinned by two storeys of car parks and services below ground, a feature which—by eliminating the ranks of kerb-parked cars—would completely alter Soho's circulation problems. Streets would be built up fairly consistently to a 'podium' level of seven storeys, and roofed over with glass to turn them, and the Berwick market, into extensive glazed arcades on the model of the Burlington Arcade.

This glass decking would, however, also serve as the glass bottoms of canals at podium level, which would serve not only as a means of picturesque circulation but also help to break down the large expanse of the podium—otherwise uninterrupted except by the squares, which would not be covered—into zones for various uses, such as pleasure terraces and helicopter stations. Rising above the podium there would also be five star-plan residential blocks, variously oriented, giving a clear rise of another twenty-eight storeys. In general form—podium and high-rise accommodation—this scheme follows the general pattern of current thought, but a bias towards the exploitation of a particular material, glass, introduces features, such as the street-canal concept, which are not to be found elsewhere. **C. Forehoe**

The Soho scheme from the south, with the Shaftesbury Avenue boundary in the foreground.

THE LUMENATED CEILING

The chief point of difference between the 'Lumenated' ceiling and other overall lighting systems is that its corrugated translucent sheet equalises the light striking the upper surface and thus presents a uniform lighted surface as seen from below. Since this ceiling *gathers* all light striking the upper surface, the reflectance values of the ceiling cavity are of considerable importance, and to give the best results all surfaces in the cavity (including ducts and pipes) should be painted white. This, however, is the only attention they require: the *finish* does not matter, and there is therefore no need for plastering.

An example of the lumenated ceiling at a motor showroom in Kensington.

The corrugated vinyl sheet is supplied in rolls 3 feet wide and up to 25 feet long, and is merely unwound, inserted inside the H section mild steel tracks which support it, pulled out to the required length and cut off with scissors.

The sheeting is subject to an anti-static process to retard the collection of dust and the suppliers run a 'laundry service' for washing and reprocessing when this is needed. *Lumenated Ceilings Ltd., 4, Lloyd's Avenue, E.C.3.*

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School at Kidbrooke, London, S.E.3. *Architects:* Slater, Uren & Pike; Partner in charge, Charles Pike; Chief Assistant Architect, H. C. Wilson. *Consulting Engineers:* Ove Arup & Partners (structural); Edward A. Pearce & Partners (mechanical, heating and electrical). *Quantity Surveyors:* Selby and Sanders. *General Contractors:* Gee, Walker & Slater Ltd. *Sub-contractors: foundations:* J. Garrett & Sons. *Electrical installation:* Holliday Hall & Stinson. *Heating and ventilation:* Ellis (Kensington) Ltd. *Plumbing:* Dent & Hellyer Ltd. *W.C. partitions:* Venesta Ltd. *Cloakroom fittings:* Mountford Bros. Ltd. *External planting, turf etc.:* Grassphalte Ltd. *Plastic and cork flooring:* Armstrong Cork Co. *Shower screens, special door handles, hood over main entrance:* The Morris Singer Co. *Door furniture:* Alfred G. Roberts Ltd. *Lecture room seating:* William Mallinson & Sons. *Linoleum flooring:* E. J. Elgood Ltd. *Wood block flooring:* Philip Flooring Co. *Extract fan grilles:* Bruce Britow (Engineers) Ltd. *Kitlockers, mobile cloak stands, library panel heating:* Comyn Ching Ltd. *Venetian blinds:* Tidmarsh & Sons. *Glazing:* Faulkner Greene & Co. *Fibrous plaster:* Clark & Fenn Ltd. *Sliding folding door mechanism:* E. Hill Aldam & Co. *Sprayed ceilings:* C. & T. Pyrok Contractors Ltd. *Plenum chamber insulation:* Jones & Broadbent Ltd. *Sound system:* Sound Diffusion Ltd. *Stage equipment:* Hall &

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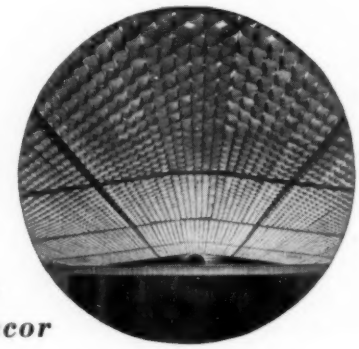

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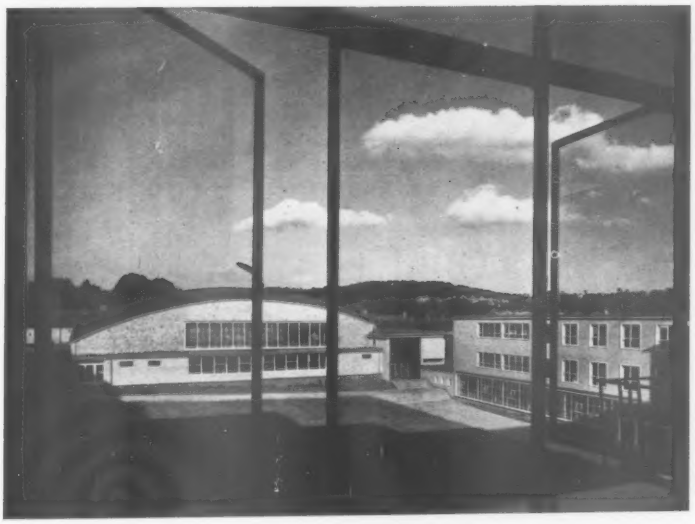

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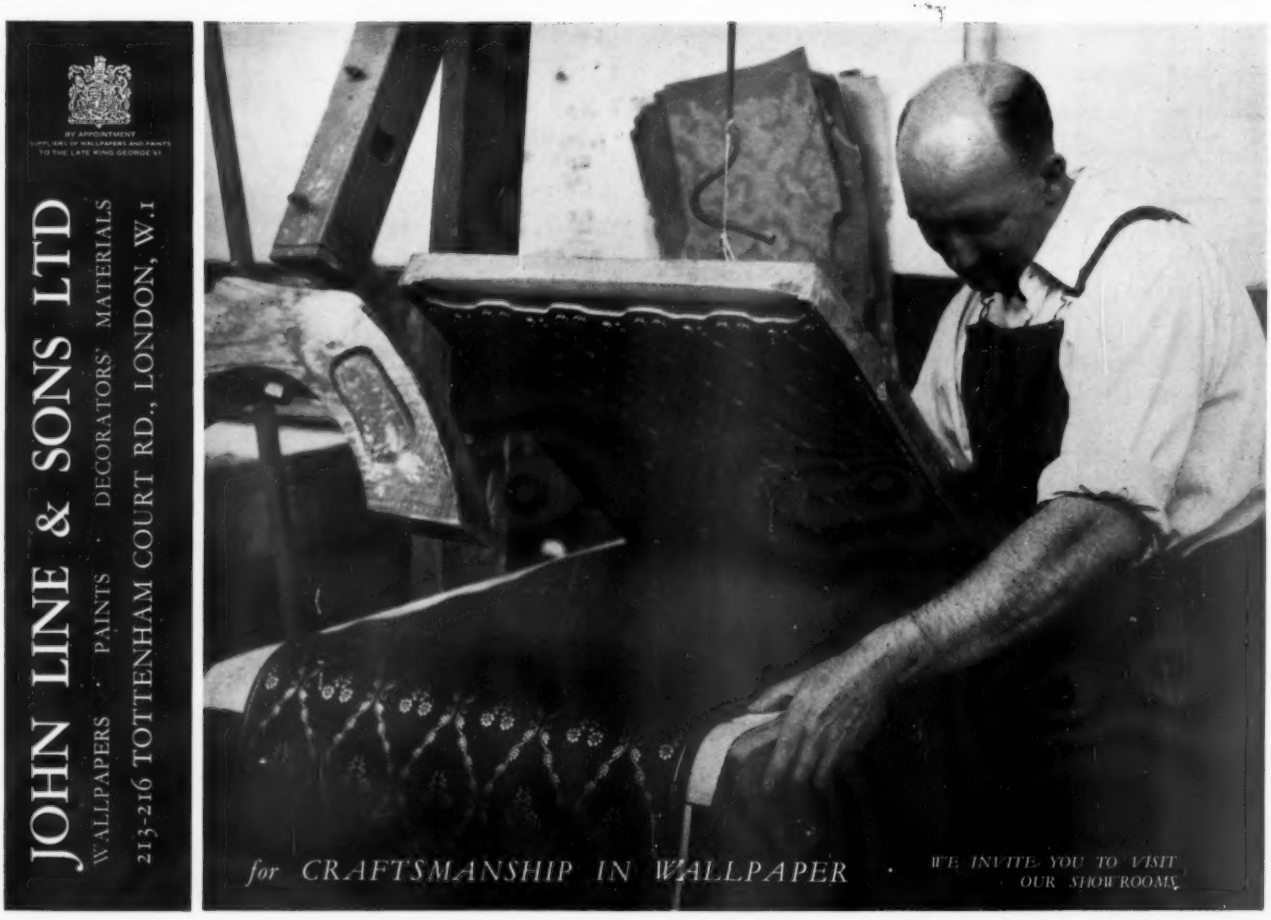
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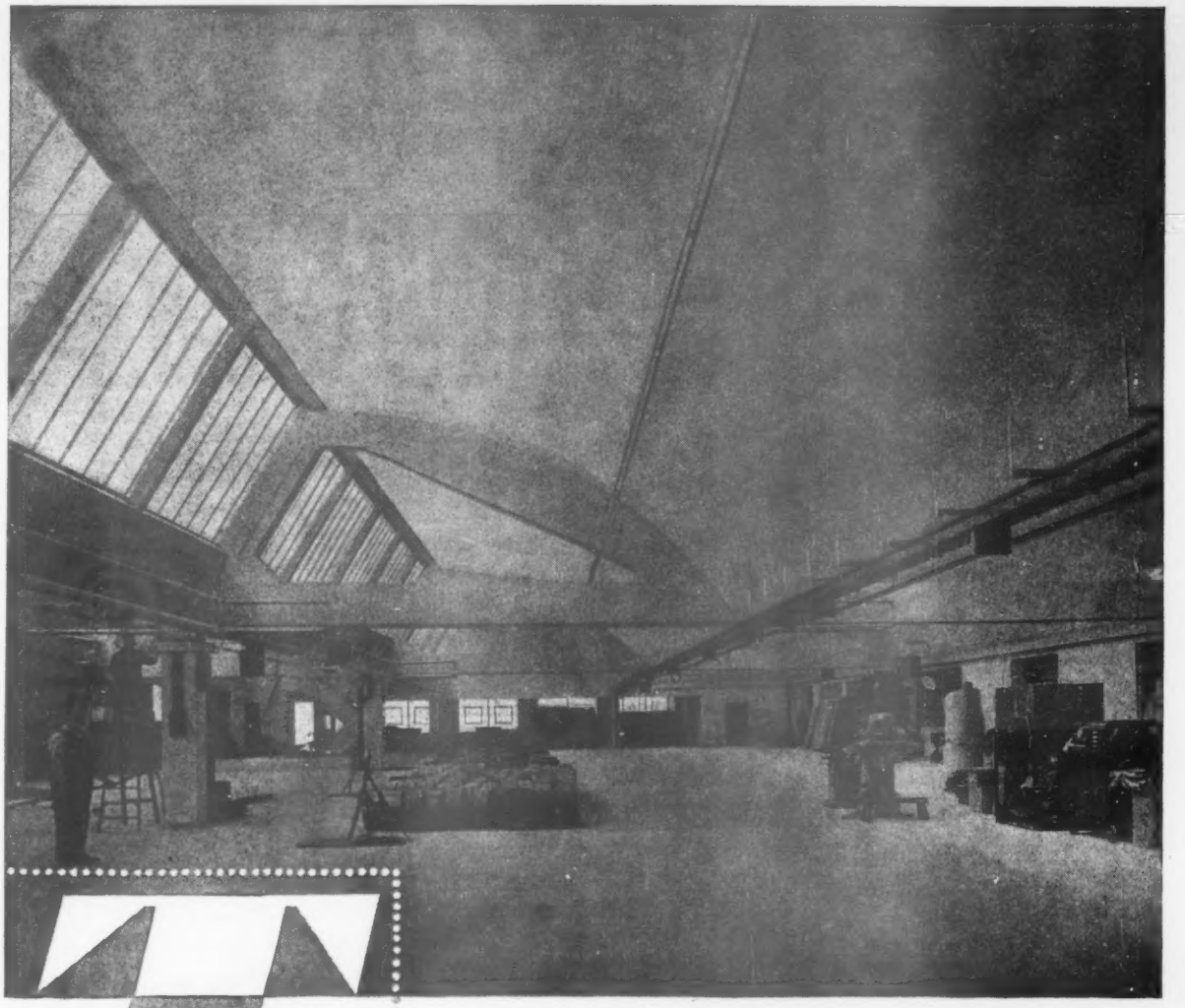

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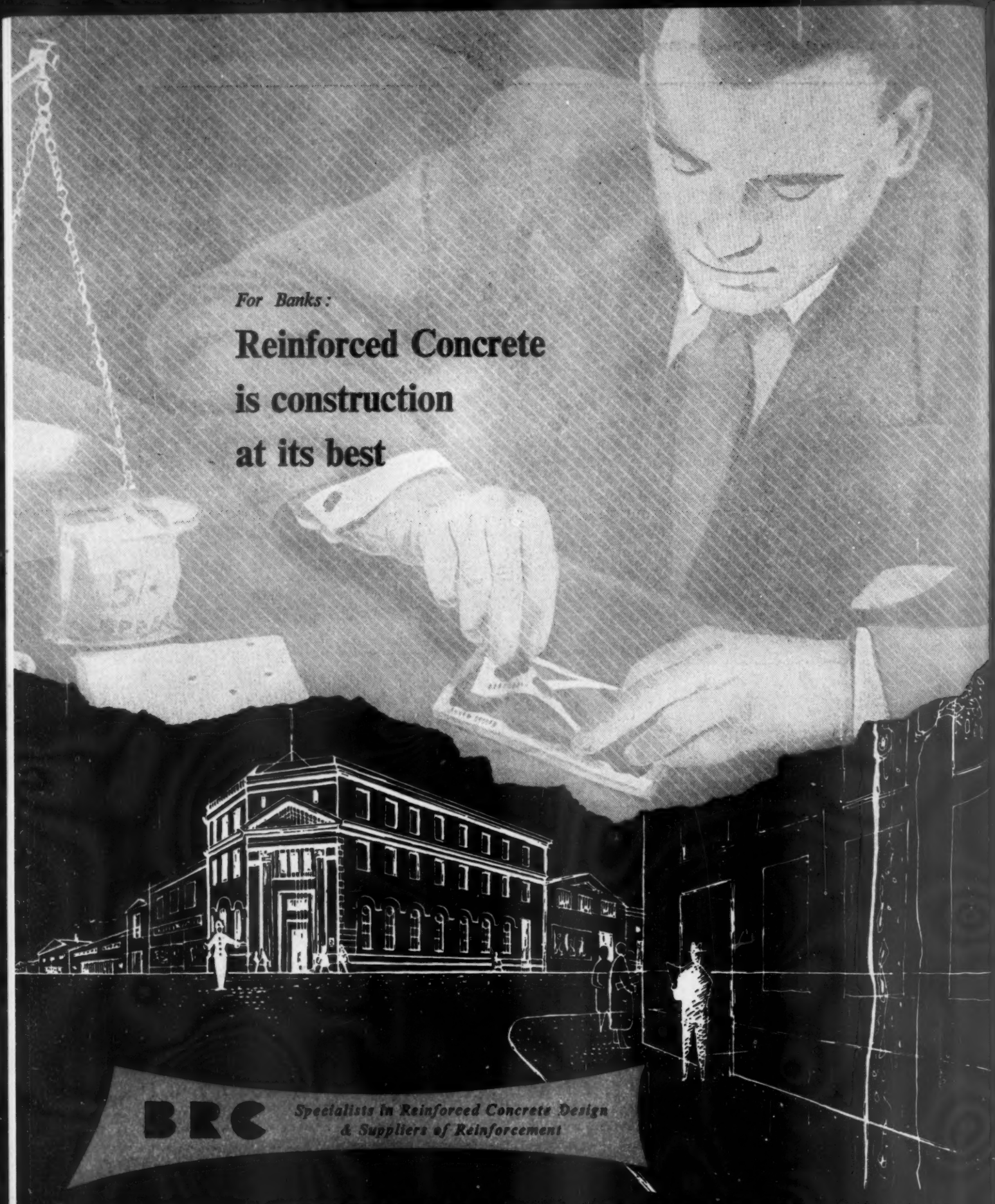

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